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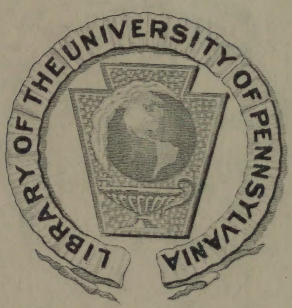

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PRESENTED BY
CHARLES W. BURR, M. D.

ELEMENTS

OF

ART CRITICISM

COMPRISING A TREATISE ON

THE PRINCIPLES OF MAN'S NATURE AS ADDRESSED BY ART

TOGETHER WITH A HISTORIC SURVEY OF

THE METHODS OF ART EXECUTION

IN THE DEPARTMENTS OF

DRAWING, SCULPTURE, ARCHITECTURE, PAINTING, LANDSCAPE GARDENING, AND THE DECORATIVE ARTS.

DESIGNED AS

A Text Book for Schools and Colleges

AND AS

A HAND-BOOK FOR AMATEURS AND ARTISTS.

BY G. W. SAMSON, D.D.,
PRESIDENT OF COLUMBIAN COLLEGE, WASHINGTON, D. C.

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TO

W. W. CORCORAN,

WHOSE

INTELLIGENT CULTURE AT HOME AND ABROAD,

WHOSE

APPRECIATIVE PATRONAGE OF ART,

AND WHOSE

GENEROUS BENEFACTIONS IN EVERY CHARITY,

HAVE MADE HIM

A REPRESENTATIVE AMERICAN

IN DEVOTION TO

"THE TRUE, THE BEAUTIFUL AND THE GOOD."

AND ESPECIALLY

THE NATIONAL PATRON OF ART

AT THE

METROPOLIS OF THE AMERICAN UNION,

THIS VOLUME

IS

Respectfully Dedicated

BY HIS FRIEND,

THE AUTHOR.

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INTRODUCTION.

THE following Treatise on the Elements of Art Criticism has originated in a conviction that the general neglect of early instruction in the principles of Art Execution is a serious defect in American education; which defect may be, and therefore should be, removed. The educated American tourist finds himself mortified amid the galleries and before the monuments of Art in the Old World, because, unlike European visitors, he has no preparatory acquaintance with the first principles of Art, kindred to his early instruction in Science and Literature, which would make him at home among such treasures, and fit him to appreciate, to enjoy and to improve his privilege. The American legislator, obliged by his position to take action in meeting the great and growing demand for public expenditures in the department of Painting, Sculpture and Architecture, is harassed with the apprehension, that, having no independent judgment of his own, he may be misled by unworthy and interested men, who are ever in advance of genuine artists in pressing their own claims. The young American artist has rarely access to technical, historical and critical treatises on Art, which may give clearness and comprehensiveness to his investigations and conceptions. To this special lack of these several special classes must be added the general want felt by the entire mass of the American people, male and female, youths and adults, pre-eminently an educated and reading people; who, though supplied with elementary treatises in every department of science and philosophy, search in vain in American and even in English libraries for a condensed and comprehensive work on Art, which shall meet their general need. The demand is a peculiar one; and the effort to meet it is attended with great difficulty.

The design of this Treatise, as its title indicates, is to present in their connection the elementary principles on which is founded a just criticism of Art, and to illustrate those principles in the History of Art Execution. Criticism is *judgment* passed upon an object considered; and Laws of Criticism are designed to guide the critic to a just judgment in the field of his special observation either of Science, Art, or Literature. In Art all cannot be practitioners or executers; for, as in every other profession so in that of the artist, the practical training requires years of absorbing application, and skill in execution can only result from a lifetime of entire devotion of thought and labor. In Art, however, all persons will be, as in every other department of human

labor, judges of the work of others; and education in the principles of Art, though only rudimentary and partial, may guide to a judgment commendable in the critic, invaluable to the artist and conducive to the advancement of the arts. It may be an extreme view that any child, of however dull an ear, may be trained to become a correct musical performer, either with an instrument or with the voice; but it certainly cannot be an error to suppose that if the same amount of training were given in the principles of Art as is given by our Colleges in the rudiments of language, rhetoric and logic, of mechanical, physical, metaphysical, political and moral philosophy, educated young men would be as well prepared to be useful leaders of opinion in the one department as in the other.

That the School and the College may supply this lack is manifest from the experience of other ages and nations. The age of Phidias and of Apelles, in ancient times, was the result of the matured growth of years of popular culture; during which all the youth taught in the common schools of Greece were trained in both the theory and the practice of Plastic Art. The era of Lionardo da Vinci, of Michel Angelo and of Raphael in Modern Italy, was developed under the influence of the theoretical study of Art by men of all ranks and classes in civil and ecclesiastical life; the principles of an intelligent criticism of Art being so universally familiar that even the common people were, as they now are, able to express an independent judgment upon masterpieces of Sculpture and Painting. At the present day such is the system of University education in England and France, and even in Germany, that Art is taught chiefly in separate schools. The popular system of American education, in which, after the primary training of the Common School, youth generally, both male and female, may aspire to an advanced course of scientific, literary and philosophic studies in Higher Schools and Colleges, seems to demand an elementary Text-book, kindred to those required in other departments of instruction. Such a Text-book, in order to meet the popular demand, must be at once comprehensive in its range, clear in its analysis and simple in its statements; while at the same time, in order to satisfy the necessities of more thorough students, it must add a more extended view of the principles of Art Criticism as recognized by philosophic writers, and of the methods of Art Execution as practiced by artists in different ages and nations.

To expect a perfect work in the attempt to supply such a desideratum would be unreasonable in the reader and presumptuous in the writer. Able artists have seldom been authors of written treatises; partly because the successful employ of the pencil, of the chisel and of the brush is not consistent with thoroughly analytic and finished use of the pen; chiefly, however, because, from the necessity of their pursuit, teachers in Art instruct by the eye and the tongue, and address only those who wish themselves to become artists and to be trained in the master's own special department. It is rare, in the history of Art, to find written treatises left by such masters as Apelles and Lionardo

da Vinci; and all such treatises are fragmentary and technical, limited to the department of Art in which the author excels, and designed only for pupils in their own special field. The writers on Art for general students and readers have been teachers, like Plato and Aristotle, Kames and Cousin, or general scholars like Pliny and Winckelmann.

Coming thus from theoretic men, who alone are prepared to undertake the literary labor, such treatises must be imperfect in detail; with many omissions important to the practitioner, and with positive misconceptions and misstatements which the thorough bred artist will immediately detect. The same imperfection, however, is met in Text-books in other departments of College education; compiled as they usually are by men versed in the literature rather than profound in the science of which they treat. There is, for this reason, scarcely a Text-book in Physical Science, Mechanical, Mental or Moral Philosophy, or even in Law, Medicine or Theology, in use among students, all of whose pages will bear the scrutiny of either the profoundest theorizers or of the acutest practitioners in any one of the departments discussed. It is to be remembered, however, that the end of education is to teach the methods of study rather than to supply complete material for a master; and that often instructors are most successful in making pupils who become masters, because they appreciate the lack of beginners, and put youth of special genius into the road that leads at once to success.

The following work is the result of extended and practical study; originating in a purpose formed prior to a tour of observation, made nearly twenty years since, in Egypt, Western Asia, and Europe; confirmed among the monuments and amid the galleries of Ancient and Modern Art in the Old World; enlarged and enriched by twenty-five years' study of ancient and modern authorities, and of intercourse with able artists; and digested during several courses of Lectures addressed to both popular assemblies and to College classes. Adepts in metaphysical research may find discussions of principles which could be more thoroughly analyzed, more ably defended and more fully illustrated; and master-artists, while deriving aid from the general survey and condensed history, will certainly meet many statements that show want of practical knowledge in details; and yet the treatise may accomplish its mission as a Text-book for Schools and Colleges, and as a Hand-book for artists and amateurs. An Apelles may have occasion to say to an intelligent and noble patron like Alexander, criticising a painting, "Hush, your majesty; the boys grinding my paints will laugh at you;" and yet without those very criticisms, even that of the cobbler as to the sandal, Apelles would never have reached the perfection he attained. Greek architects, sculptors and painters in the days of the Roman Emperors might think the Latin of Vitruvius and Pliny did inadequate justice to the transcendent genius in art whose works they analyzed; and yet without those Latin treatises the methods, if not the names of the peerless Greeks would be unknown to modern students. If the present work but hints to students of

art the leading principles of criticism, and guides artists to the sources of investigation as to the methods of former masters, its aim will be realized.

The work embraces seven distinct Books; the first Book treating of the Principles of Criticism as developed in the laws by which Art addresses the nature of man; the remaining six Books illustrating the application of these principles in the methods of artists and in the historical progress of the several arts of Drawing, Sculpture, Architecture, Painting, Landscape Gardening and the Decorative Arts. In the present volume, or Text-book proper, a condensed and comprehensive view of the entire field is attempted; embracing that extent of statement and amount of illustration supposed to be adapted to the ordinary pupil and to the general reader. The quotations are generally brief; the references to Hebrew and Greek writers of the Old and New Testament being inserted, since they are familiar to all readers; while citations from Greek and Latin authors are quoted with the mere mention of their names, except in cases where definiteness of reference seems desirable. Words of special importance introduced from the Hebrew, Arabic, Greek and German, as well as from the Sanscrit, Latin, Italian and French, are written in Roman letters italicized: because, first, their pronunciation is thus indicated to English readers; second, their originals are sufficiently manifest to classical scholars; and third, this method of orthography has the sanction of the most finished ancient and modern writers, as of Cicero and Pliny quoting from the Greek, and of the ablest modern philologians of Europe quoting from the Shemitic as well as the Indo-European tongues. The volume is issued without plates of engraved illustrations; partly, because when introduced they must occupy a second volume; farther, because only the experience of practical teachers can determine what amount of illustration is desirable; yet more, because every efficient teacher must have beforehand, or in addition to Text-book engravings, his own and other easily accessible collections of works of art which can alone properly illustrate principles; and mainly, because the student of art, like the artist, and as the student of every science, must gain the power of forming conceptions without any model, if he really attains to any true knowledge of the subject of his studies. In using the volume as a class-book every teacher's individual judgment will be a sufficient guide in the omission of what is beyond the attainment, or unnecessary because of the advancement of his pupils; though the entire field presented is essential to a comprehensive student.

It is the design of the author at an early day to add a supplemental volume embracing the more important additional citations from ancient and modern authorities, in their original languages, regarded as essential to the teacher and special student of Art; to which may be added lists of authorities, glossaries of technical terms, diagrams illustrative of the Text-book, and engravings of master-pieces in the various arts, to such extent as the merits of the work and future demand of readers may seem to justify.

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HINTS TO TEACHERS.

Many instructors have asked suggestions for an abridged course in Art Criticism, adapted to pupils of High Schools and Female Seminaries.

The body of this Text Book, embracing in all about 800 pages, can be readily mastered by College students in 100 lessons; or in daily recitations during half a College year. It may and should be accomplished by advanced classes of young ladies, with all the requisite illustrations supplied by a teacher's acquisitions and collections, in a course of one year's study. Since less mature pupils will want the complete work for future reference, instead of the employ of an abridged edition the author suggests the following omissions in the present volume:—

IN BOOK I. OMIT

p. 32, Sect. 4 to p. 37.
p. 43, Chap. II. to p. 68.
p. 79, l. 21 to p. 80, l. 12.
p. 120, l. 16 to bot. of p. 121.
p. 123, l. 18 to p. 124, l. 15.
p. 126, Chap. V. to p. 147, Sect. 5.
p. 174, l. 20 to p. 181, Sect. 4.
p. 184, Sect. 5 to p. 187.
p. 191, l. 19 to p. 193, Sect. 8.

IN BOOK II. OMIT

p. 217, Sect. 4 to p. 222.
p. 233, Sect. 9 to p. 236.

IN BOOK III. OMIT

p. 289, Sect. 8 to p. 292.
p. 303, Sects. 6 and 7 to p. 313.

IN BOOK IV. OMIT

p. 393, Sects. 7 and 8 to p. 400.

IN BOOK V. OMIT

p. 509, l. 33 to Sect. 2, p. 513.
p. 549, l. 16 to Sect. 3, p. 551.
p. 552, l. 28 to Sect. 4, p. 554.
p. 558, l. 20 to p. 559, l. 13.
p. 561, l. 14 to p. 563, l. 28.
p. 564, l. 25 to Sect. 6, p. 566.
p. 575, l. 4 to Chap. VI., p. 583.
p. 591, l. 24 to Sect. 4, p. 593.
p. 594, l. 37 to Sect. 5, p. 597.
p. 610, l. 4 to Sect. 4, p. 613.
p. 614, l. 33 to Sect. 5, p. 616.
p. 620, l. 14 to p. 622, l. 7.
p. 623, l. 1 to bot.
p. 643, l. 3 to p. 647, l. 33.
p. 652, l. 27 to p. 653, l. 15.
p. 655, l. 11 to p. 656, l. 6.
p. 658, l. 3 to l. 25.
p. 684, l. 3 to l. 28.

IN BOOK VI. OMIT

p. 728, Chap II. to p. 748, Chap. III.
p. 761, l. 32 to Sect. 6, p. 767.

IN BOOK VII. OMIT

p. 790, Sect. 1 to Ch. III., p. 824, for males.
p. 816. Chap. II. to Chap. III., p. 824, for females.

The omissions of Chapters II. and V. in Book I., and those in Books VI. and VII must depend on the character of the pupil and the judgment of the teacher.

Art Criticism.

BOOK I.

PRINCIPLES OF MAN'S NATURE AND RELATIONS TO THE WORLD AS A BEING AFFECTED BY ART.

It is through a material body that man as a spiritual being in his present stage of existence derives impressions. These impressions are twofold in their nature, and accomplish a twofold end for us. In eating, the impression of taste is corporeal, made directly on the bodily organ; but in viewing an object with the eye the impression is directly recognized in the mind; these two impressions being thus distinct in their nature. In their design, again, there is a double end secured by all impressions made upon the mind through the body; for when sensations of corporeal delight accompany the taking of food whose nourishment is necessary to our existence, and when pleasant ideas in the mind are associated with the guiding office of the eye in a toilsome journey through a pleasant country, we are just as certain that we are made to seek pleasure as to secure utility during our life in this world.

Art addresses the mind through some one of the bodily organs. Its appeals are distinguished from mere corporeal impressions, such as those of heat and cold, hunger and satiety, in that they affect the mind as well as the body, and affect it with pleasurable emotions. These appeals again are distinguished from purely intellectual or spiritual impressions, such as the delight of Newton in mathematical calculations, and the rapture of Descartes in metaphysical inquiries in that they are always accompanied by and are produced through a sensation on the bodily organs; as of sight, or hearing.

The eye is the chief organ through which art addresses men; yet

the other organs of sense, especially the ear, have their own classes of art to appeal to them; while it is the combination and co-operation of all these that gives the highest delight possible. When, for instance, in a ride through a beautiful country in spring, the fanning of the warm breeze is a soothing luxury to the touch, the exhilaration of gentle motion gives a delightful play to every muscle, the fragrance of the flowers refreshes the sense of smell, the flavor of the first ripe fruits feasts the palate, the singing of the birds makes melody for the ear, and the ever varied forms and hues of hill and vale, mountain and meadow, leaf and flower, insect and bird, beasts and passing human beings, unlike the slightly changing impressions on all the other senses, give a never ending variety in their address to the eye, we are satisfied, that while all our senses were given for our pleasure, the organ of vision is the one to which the broader field has been assigned. These suggestions hint the appropriate order to be followed, and the proportionate consideration to be given in treating of the powers in us to which Art makes its appeal.

CHAPTER I.

GENERAL VIEW OF THE CONSTITUTION OF MAN AS DESIGNED TO BE ADDRESSED BY ART.

THERE is in us a nature implanted by the Creator which prompts an *admiration* of Art. By implanting it the "Father of Spirits" declared His design that this capacity should be cultured. If neglected, His purpose is frustrated; a source of happiness remaining undeveloped, or being perverted to our injury.

There is also created within us a fondness for the *imitation* of Art, as its appeals address our eye and ear in the forms of beauty and sounds of melody seen and heard amid the Creator's works. This faculty, also, He sufficiently shows, by having implanted it, should be exercised; otherwise a power most efficient for promoting the happiness and virtue of others is lost.

SECT. 1. THE WORLD WITHOUT US AS MADE FOR THE ENJOYMENT AND THE EMPLOYMENT OF ART SENSIBILITY.

When God made man in his own image, and he was perfect in all

his powers, we read that He made every tree *first* "pleasant to the eyes," *then* "good for food." The eye saw the *beauty* of the fruit *before* the palate tasted its sweets; the intellect was addressed more than the mere bodily sense; the delights of the mind were made both to precede and to exceed those of the flesh. The *love of art*, and the power it exerts to promote man's happiness and welfare, was the first which God made to bless and govern us. In the temptation to evil this order of man's original impulses was inverted; for we read that "when the woman saw that the tree was" first "good for food," and second, "pleasant to the eyes," "she took of the fruit thereof and did eat." Still, in all Eve's progeny, the first intellectual development is the germ of the love of art, addressing the eye in forms of beauty, or the ear in sounds of melody. The infant is stilled as readily by a pretty toy, or by the nurse's song, as it is by the luxury of its mother's milk. This is the first element entering into our love of Art and our impulse to make it our study.

We read again that man was placed in Eden where every tree was *already* "pleasant to the eye," "to *dress* and to keep it." There were additional forms of beauty and grandeur that man was made to conceive and execute; which, even amid the Creator's perfect works, might be studied and put into shape. Among the countless forms which each tree might have taken, their Maker had chosen one, from which man might by pruning make variations. Among the endless arrangements in the grouping of those trees their Designer had selected one alone; while man was invited to study and execute others. In all Adam's posterity, the love of *doing* and of *making* is a natural impulse; the conceiving and executing new forms of beauty is just as much implanted in us by the Creator as the admiration of beauty in works already formed by Him. The child loves to draw and to make letters before he cares to learn their names and their connections in words. The first impulse of even the maturest mind on taking up a work in Philosophy, History, or even of Poetry, is to examine the artistic illustrations; for the artist speaks quicker to the eye than the pages of the author can speak to the mind.

The range of this power of the human mind was strikingly illustrated in its first employ. Man's first lesson in art was its highest, most complicated and most impressive form, "Landscape Gardening." As this is the originating and shaping of individual forms, the tinging of each with varied colors, and then the grouping of those forms and the harmonious intermingling and blending of those

colors, the whole range of man's faculties for the creation of art, was at once and together called into requisition.

Sect. 2. The Nature within us to which Art appeals.

Philosophers of eminence in ancient and modern times have divided the elementary principles entering into our impressions of things and beings within and about us into three distinct classes; "The True, the Beautiful, and the Good." The love of the true, the beautiful and the good, with the aspiration to attain them, as a personal possession, forms the ideal of a complete man. To this analysis Ethical Philosophy adds "The Right;" the love of which, or "Holiness," is the crowning moral attribute of the All-perfect Creator, and the ultimate and climactic attainment of all spiritual beings. Truth speaks to the intellect, beauty to the sensibilities, goodness to the interests, and righteousness to the conscience of man.

Under the idea of the beautiful is included an extended class of emotions; as the admiration of the delicate and the graceful, of the melodious and the harmonious, of the sublime and the grand. These emotions, when produced by objects appealing either to the eye, or to the ear, or to the conception of the mind, make up what is properly termed "the love of art;" and the objects of perception and conception, which man has created in order to awaken these emotions, come under the designation of "The Fine Arts."

The Fine Arts as distinguished from the Useful Arts are those that appeal to the love of beauty in distinction from the love of utility. *Art* is properly human skill in constructing. When the end sought and the result secured in the employ of human skill is an article for man's *use*, without regard to its beauty, that skill in constructing belongs to the class of *useful arts*. When the end sought and the result secured by this skill is an object that awakens pleasurable emotions without reference to the idea of utility, that work of skill belongs to the Fine Arts.

Sect. 3. The Bodily Organs through which Art addresses the Human Mind.

We are accustomed to speak of man as having five organs of sense; through each of which are received impressions leading to distinct classes of conceptions and affording different kinds of pleasures. These are smell and taste; touch to which some add the muscular sense; and hearing and sight. The analysis of the elements of nature as they affect these several organs of sense was early and

ingeniously made by the most ancient Hindoo philosophers Kapila and Kanada. They recognized five elements in nature: earth, water, air, fire or light, and ether. Earth the grossest of material principles affects the lowest in order of the senses, smell, giving forth odor; water affects taste; the air impresses the touch; light gives sight, and the etherial fluid produces hearing.

In this very early analysis is to be recognized the foundation of permanent truth since developed. The practical and discriminating Grecian philosopher Aristotle grouped the senses into two classes, those which receive impressions from objects by immediate bodily contact with them, as taste, touch, and the muscular impressions associated with touch; and those which receive knowledge of objects at a distance, as sight, hearing, and smell. It is an instructive fact that not only sound, but also light and odor were at so early a day believed to be transmitted by the agitation of an etherial medium intervening between the object and the organ; a fact which must be kept in mind in order to an understanding of Grecian theories as to the principles of Art.

While Science, which addresses the intellect, classifying facts and searching for their principles, may adopt the order of the senses above stated, Art appealing to the sensibilities points to another division, one which regards effects rather than causes. Regarding the character of the knowledge derived from them and the manner in which it is gained, but more especially the nature of the pleasures attending their exercise, the senses are appropriately ranged in three classes; *first*, smell and taste; *second*, touch and muscular pressure; *third*, hearing and sight.

To the first of the three classes just mentioned, smell and taste, belong the grosser and purely material pleasures. It is only by a direct meeting and mingling of the material bodies not belonging to our organism with the organs that taste can address us; while smell is made chiefly to be a servant and subordinate to this sense which gives only corporeal gratification. Yet even these lower senses, as we shall see, in the feasts that cement human friendships and in the incense which was of old called an "odor well pleasing to God," were dignified as associates of the higher impressions of Art, and ministers of love to God and man.

Next to these lower and material pleasures come those of touch, including the whole range of muscular and nervous sensation, common to the entire bodily frame; which as Hobbes[1] has suggested may

[1] Called "Physica" in Hobbes' Leviathan.

be called *physical.* The impressions received through these sensations, hereafter to be classified, embracing the luxury of the fanning breeze and of the laving bath, the gambols of the lamb and of the child, and the luxury of action and toil in every stage and department of human life, seem designed to minister to the health and comfort of man's physical nature, and hence indirectly to the mind's pleasant and successful employ.

Yet above these, belonging to the class of directly *intellectual* impressions and pleasures, are those derived from the eye and the ear. Lord Kames[1] in making this distinction, alludes to the following facts. In smelling and tasting, and also in touching, we are conscious of contact with the object producing the impression; hence we naturally refer the pleasures derived from these sensations to the organs themselves; and therefore we properly as well as naturally regard these pleasures as corporeal. In pleasures derived through the eye and ear, however, we do not at all think of the eye and the ear as the seat of the sensation experienced; we refer the delights of sight and hearing immediately to the mind itself. The materialistic philosophy adopted by Lord Kames influenced him however to rank the pleasures of the eye and the ear not as purely intellectual, since a bodily organ is employed in obtaining the impressions of sight and sound; and hence he ranked them as intermediate between purely intellectual and corporeal impressions and pleasures. It is not, however, the special designation given, but the relative rank assigned to these affections that is to be regarded in the study of Art.

Sect. 4. The external and internal media by which different impressions of Art are transmitted from the outward object to the mental organism.

The organs of sense receive impressions from objects outside of the human body, of which those organs are a part; and those impressions are conveyed inward from the organs of sense to the mental nature. Here are three points to be connected, and two chasms between these three points. We are assured there is a bridge of passage, a medium of communication, both between the object and the organ and between the organ and the mind; and philosophy has always sought to lay hold on this unseen bond of connection so as to assure itself of its nature.

In the inquiry two classes of theoretical problems are involved.

[1] Elements of Criticism—Introduction.

whose solution may be beyond the reach of human apprehension. The practical necessity of their brief consideration in the study of the principles of Art Criticism is two-fold. In the first place, among the earlier representatives of our race who attained the highest excellence in art, principles of design and of criticism are found so interwoven into the texture of their philosophic opinions on the points here alluded to, that without due attention to these it is impossible to gain clear conceptions of the ideas on which as a foundation their works are executed and their treatises on Art written. Yet again, among the philosophic students and masters in Art in modern history and in our own times, there is a higher region of thought belonging to theirs as to other professions, which the uninitiated in vain try to penetrate so as to have a clear vision, until by careful and long attention the new range of ideas of the Art fraternity begins to break upon their comprehension.

The nature of the media through which objects without make impressions on our organs of sense, in every age discussed, has always presented substantially the same observed facts recognized by all classes of thinkers; while theories in explanation of these facts have shown common grounds of difference in all ages. Indian philosophers, not able to carry their analysis farther, recognized four material elements in nature, and one immaterial or etherial; and these five elements they regarded as the media through which impressions pass from outward objects to address the five senses. The most subtle of these, the immaterial or etherial element, is the only one that affects the hearing alone. The next in subtleness, light or fire, addresses itself to sight while it also produces sound, thus acting on the hearing; the third in order of tenuity, air, is the first to be the medium of touch, while it affects also hearing and sight; the fourth taking on grossness, water, or matter in a liquid form, is the medium without which taste cannot be affected, while it also is a medium of hearing, touch, and sight; and lastly, the grossest of all, earth, or matter in a solid form, is the necessary medium of smell, while moreover it addresses all the other senses. It was a natural observation that the grossness of these senses is in the main proportionate to the grossness of their media.

Among the Greeks, Aristotle, the practical philosopher of his nation, applied logical analysis to this general theory. So far as their external media are concerned, Aristotle classes touch and taste together, because their impressions are not made on the mind except by direct contact of the object with the body: the flesh of man being

the medium of transmitting their affections to the mind; and the two differing only in this that while the medium of taste is local and partial, situated only in the tongue and restricted to one class alone of affections, touch has the whole body as its common organ and embraces many affections of each part of the body. The other three senses Aristotle classed together as those which have their impressions transmitted from objects at a distance and not in contact with the person receiving the impressions. As to these senses Aristotle contended that it was not particles thrown off from the object of sight, sound, or smell, but vibrating waves in the intervening media, that produce these affections. That vibrations in air are the medium of sound he thinks manifest since it is seen in the rush of air from a vibrating trumpet; it is illustrated by echoes; and it is confirmed by the fact that sound passes readily through substances having pores like wood, along which the vibrations of air may be propagated, while water that has no such pores arrests those vibrations. Sight, he urges, is communicated by similar vibrations in a medium which must be more subtle than air; since rays of light proceed readily through water and glass, which substances obstruct the transit of sound. Smell too he urges with equal conviction is not produced by particles thrown off from its objects, but by vibrations in a medium, intervening between the object and the organ: which, as he thinks, is proved, among others, by these reasons; that the odorous object as musk is not diminished in bulk by a continuous filling of an immense area with its odor; while again the impressions of smell are not the strongest, when the object is located nearest to the organ, but when at an intermediate distance, which seems to depend on a law of vibratory harmonies.

It is interesting to observe that in the main points of difference as to the media of sensation, the two classes of theorists in India corresponded strikingly with kindred classes in Greece. Both classes agreeing that the communication of impressions from material objects to the senses was through vibrations in intervening media, the main point of dispute was this; 'at which end of the line do these agitations of the media originate? at the object perceived, or at the organ of sense perceiving?' Kapila, the able Indian philosopher, who made human knowledge to originate in sensation, taught that it is from the object that the agitation of the medium begins. On the other hand, Gotama, the Indian advocate of the opinion that the mind itself is the origin of true knowledge, contended that the organ itself, by its spontaneous action, produces agitations in the medium

which reach the object: the eye darting forth a ray which goes to and takes hold of the object; as he said was seen in the eyes of the cat when in the dark. Aristotle, among the Greeks, with the keenest metaphysical acumen, argues against Plato, that every impression on the senses made by an object is an influence coming from "the sensible object" and falling upon "the organ of sense;" and that "sensation is produced by the vibrations of the medium which is between the organ of sense and the sensible object." Later writers following Aristotle, as Galen the great physician, developed these principles even more at length than Aristotle, adding accumulating proofs of the correctness of his theory.

The second and yet more fathomless gulf, that which separates between the material organ of sense and the immaterial spirit, the ancients given to metaphysical study, sought yet more carefully to explore, that they might trace the passage by which impressions pass over it; and in the web of their theories on this point their theories of Art are so interwoven that the one cannot be successfully studied without considering the other. The acute Indian philosopher, who amid the dreamy rationalism of his ancient day showed a power of metaphysical analysis which has begun to be appreciated in our day when that same rationalism is again rife, presented this connection of principles; which seems almost to have attained to the ripe results of physiological study in modern times. Between consciousness and the organs of sense there are five etherial agents; which five agents are allied to spirit from the fact that they are immaterial, and are thus prepared to serve as media, through whose agency the soul acts on the body. Next to these etherial agents are eleven organs of sensation and of action; including first, the five organs of sense with their nervous connections to their centre the seat of consciousness; second, five corresponding inward organs by which the mind acts outward on the parts of the body; and third, one internal organ, called "manas," apparently seated in the brain, towards which all these other organs concentrate; which latter is at the same time the seat of sensation and the origin of action in man. Aristotle as a comprehensive philosophical writer only repeated the theory of this Indian philosopher; but Hippocrates, who lived before Aristotle, and Galen who flourished in the times of the Roman emperors, and expounded the writings of Hippocrates, developed fully the doctrines of his own and of other ages. The Greek physiologists taught that there is a four-fold nature in man; first, the spirit proper, having the power of reason, indestructible in its very nature, and possessed by

no creature of earth except man; second, the animal soul, including the passions and instinct which guides animals; third, the physical nature, an immaterial subtle fluid, which, intermediate between matter and mind, is the agent by which they reciprocally act on each other; and finally the body which alone is matter proper. The seat of the spirit proper they regarded as the brain; arguing this from the fact that all the special organs of sense are seated in the head and connect directly with the brain, while the organ of the general sense touch is distributed over the entire frame. The seat of the animal nature, the passions especially, these philosophers, who were the teachers of the ancient artists, regarded as seated in the trunk of man; the upper portion or chest being the centre of the higher sensibilities, the heart acting as their organ and beating with impulses proportionate to the excitement of passion; while the abdomen and lower part of the trunk was the seat of the sensual appetites. The result of these theories on Art show themselves in the intellectual brow and features of Apollo, in the heaving chest of the gladiator and of Prometheus, and in the bloated abdomen and bulging thighs of Bacchus.

The most important part of these ancient theories as to the internal media of impressions made on the mind by outward objects, in its bearings on Art, is the belief in the existence of a subtle fluid which was the medium of intercourse and reciprocal action between the material and spiritual part of man. Suggested by Kapila in India, developed by Hippocrates and Aristotle in Greece, kept alive in the Greek and Latin languages and literature by distinctive technical terms, revived in the theory of the "animal spirits" by the French Descartes, and presented at the present day by modern physiologists under the designation "the nervous principle," it has become the basis of a practical philosophy maintaining for ages its influence on human opinion and conduct. Sublimated in the pantheism of the Indian Gotama, idealized and made the basis of a refined deistic spiritualism by Plato and subsequent philosophers of his school, it has been the philosophy of the Fine Arts in the ages of their highest culture and the source of that mystical language belonging to the esoteric theories of artists as a class which has shut them out more than the professors of any of the Technic Arts from the channels of common human sympathy. It is this that is set forth in the popular ideas of "the inspiration of genius;" "the divine that dwells within and moves upon the spirit of the artist;" that possesses him with enthusiasm in the hours of his most successful invention and execution;

and which, yet more, glows with such a fervor in the extatic moments of his completed conceptions and of the finished touches given by his chisel and brush that, not only the artist himself, but even dispassionate beholders may well think him swayed by a power more than human. The practical man and philosopher will still contend with Aristotle and Galen that there are fixed rules of Art, which the sciences of Mathematics, Anatomy, Optics, Physiology, Psychology, and Rhetoric, may develope for the guidance of the artist; that the power that arouses, animates and guides the artist in his highest efforts is a nervous energy concentrated, a judgment, taste and imagination cultured, refined, and ennobled, and now for the moment quickened and stimulated by its own fervor of action; while, too, some of the very ablest of their own fraternity, as Apelles the Athenian, and Lionardo the Florentine, will establish this by the development of the rules which have guided them in their masterpieces of design and execution. Others, however, artists as well as poets, will carry to its extreme the statement that "the poet" and artist are "born" to inspiration, though "the orator is made;" and they will contend that their successes are achieved under an impulse which they themselves can neither arouse, guide, or control; that if there be laws of truth in form and coloring, of design and execution in Art, they are learned by intuition if found out, and they are hit upon by men of genius without even knowing what they are. The discussion of the truth of either of these theories, the effort to establish the one or the other, is beyond the province of the Art critic; as, perhaps, it is beyond the region of legitimate metaphysical inquiry. Since, however, a large class of the ablest artists have learned their philosophy in the school of Plato, and are ideal and transcendental in thought and expression when communicating with men of other professions, it is important in the study of Art to know the source whence they draw their theories and the origin of their technical expressions.

Sect. 5. The methods by which Artists make their addresses to human sensibilities.

A glance at the earth as created with the design to produce in us pleasant impressions has shown that we are made to be affected by Art. A reference to the capacities and susceptibilities of the human mind has hinted the nature of Art which thus affects us. A survey of the bodily organs through which Art addresses the mind has suggested to us the extent of the study on which we have entered.

A brief review now of the methods by which artists have gained power over man as an individual and as a race may guide us to a natural order in tracing the influence of art over human nature, and may stimulate our zest for the study by a conviction of its value.

The power of art to sway men may be traced in every age and clime. It is seen in its exuberant and even irreverent rivalry of the Great Creator's own vast works in the perished tower of Babel which was to reach Heaven with its top, and the scarcely less aspiring monuments of ancient Egyptian grandeur, whose artists cut statues out of mountains, and reared new mountains in their place, as is beheld in the Sphynx and the Pyramids at Memphis, and in the temples, statues and obelisks at Thebes. It is observed in its humbler form in the nicely-carved articles of ebony and ivory brought now from the centre of Africa, in the coral and shell ornaments of the simple Islanders of Polynesia, and in the hideously adorned pipes and tomahawks of the rude natives of our own land. It is, however, in the special home of Art, in Ancient Greece and Modern Italy, that its power for good or evil is most seen.

The Greeks spoke of the origin of art and of its power among their ancestors under the legend of Orpheus, who charmed the forest trees and wild beasts with the music of his lyre. The idea cloaked under this imagery is the power of mental culture, beginning with the attractive instruction that comes through the fine arts, to influence men from childhood to old age. In that early era all arts were united in one; there was no classification of them. Afterwards philosophers began to analyze the principles entering into the arts; and the Muses, the spirits supposed to preside over Art were separated, first into three, and afterwards into nine. The original and natural divisions were *Melete*, thought; *Mneme*, memory; and *Aœdē*, expression. At a later day when Art became more elaborate, and when the sensibilities to which it appeals became more linked with the grosser and animal impulses the subdivisions of the third, *Aœde*, reached no less than nine. Their names and representations were as follows: *Clio*, History, pictured with an open scroll in her hand; *Melpomene*, Tragedy, veiled, leaning on a pillar, and holding in her left hand a tragic mask; *Thalia*, Comedy, holding in one hand a comic mask, in the other an augur's wand; *Euterpe*, Music, holding two flutes; *Terpsichore*, the Dance, in a dancing attitude playing upon a seven-stringed lyre; *Erato*, Amatory Poetry, holding a nine-stringed lyre; *Calliope*, Epic Poetry, a roll of parchment in one

hand and a straight trumpet sometimes in the other; *Urania*, Astronomy, a globe in her left hand and a pointing rod in her right; *Polyhymnia*, Histrionic Art or Eloquence, with the forefinger of her right hand on her lips or a scroll in her hand.

It was the same Greeks, who, after the age of fable when history became authentic, gave the name *poietes*, or Creator, to the master in poetic composition; and the name *glyphos* or carver to the sculptor of material forms of beauty and nobleness. At a very early day the before fabled Muses were inaugurated as chief-teachers in the schools of Greece. Pythagoras about B. C. 500, having learned in Egypt's advanced schools the methods of instruction, introduced *music* into his school; that term including the whole range of philosophic and artistic studies. So far did he carry his idea that the Muses, or the spirits of Art, preside everywhere in nature, that he associated the higher mathematics as applied in Astronomy with the fine arts. Thus as a figure of the harmony of the Universe, he taught the "music of the spheres;" that the heavenly bodies in their steady sweep through space produce as on an Æolian harp, a beautiful and sublime harmony. Nearly one hundred years before Plato, Eumolphus, of Sicyon northwest of Corinth, introduced into the common schools of Greece instruction not only in the principles of Art, but also in its execution; so that all the boys thus trained could not only appreciate and justly criticize the works of their artists, but could even execute themselves works of plastic art. Athens was not long in copying such a suggestion. Plato speaks of education as it was given in his time in words which show the extent to which Art Education, absorbing all intellectual training was carried; "Education, first for the body gymnastic, then for the soul *musical*." Pericles, and cultured men generally, as Plutarch and other writers plainly teach by their allusions, were trained to the highest degree of skill in art. The influence of this training in chastening the sensibilities and moulding the character was most powerful and most happy. The religion of the Greek was love of art; their deities were embodiments of Art ideas; and the common property of the state, the *res publica*, consisted of collections of art in temples and statues, to whose increasing fund the Athenian people willingly devoted half their time and labor, while their own private houses were of the plainest style. Art education raised the Greek people to the highest rank in intellectual advancement, and in moral refinement. Most of all, it begat in them that exalted religious yearning which made them the first people to appreciate and embrace "the truth as it is

in Jesus," as well as "the beauty of holiness" exemplified in Him and secured by His religion.

The early Romans, followed the Greeks as cultivators of the arts, and that because of their moral influence. Sterner however than the Greeks, in their maxims and habits of external morality, as the demands of their national life as a nation were rougher and more practical, they rejected some branches of Grecian art. The Greeks had held the nine Muses, so very different in their character and office, in equal esteem; as is indicated by Herodotus in his use of their names for the heading of the nine successive books of his histories. The Romans, however, in their better days made a wide distinction between them. "Melpomene" and "Thalia," the drama both tragic and comic, they rejected as cultivating a fictitious and unpractical virtue; and "Terpsichore," the dance, they utterly expelled as an open enemy to healthful physical development, and as a secret foe to moral purity. When, however, the Republic with its sages and moralists was gone, and the first days of the Empire with its bright lights of literature had set in twilight, Roman artists became even more licentious than Roman historians and poets. And then, according to the wise and kind law of Him who guards the world from moral even more carefully than from physical corruption the putrefying carcase from which the life of true art had departed was buried beneath the ashes of Vesuvius in Southern Italy or Magna Grecia, and by the ravages of the stern Goths in Northern Italy or old Etruria; until a people breathing the purer air of Christianity should arise to exhume the bones, cleansed by the baptism of earth, and to make them true models upon which modern artists might revive the ancient Grecian perfection in art.

Since the days of the Romans the love of art has lingered in the south of Europe, especially in Italy. At times the spirit of error and of evil has triumphed over man's better impulses so much as to pervert even art itself. As the comic and even the tragic muse became odious at Athens and were banished from Rome, and as Terpsichore, the leader of the dance was discarded as a harlot among the stern Romans, so the quicker moral sense of Christian artists has been a safe censor of public morals. Such is the inherent and natural power of Art to purify man's desires, that its permanent perversion is impossible. As their name indicates, the Fine Arts are and must be agencies for human refinement. In Italy, they still exert a moulding influence which one thoroughly acquainted with the Italian character, learns to appreciate. The French as a

people have received a new intellectual and moral impulse amid the galleries of art gathered by Napoleon and thrown open once a week to the public. In England, too, a growing influence from art in refining the mass of the people educated and uneducated may be traced; while the American republic, specially requiring this power as a social bond and as a moral refiner, though in its youth as a nation, is just awaking to the importance of Art study, and just beginning to realize its influence for good.

Sect. 6. The Classification of the Fine Arts in accordance with their modes of appeal.

As we have seen, according to our Creator's wise and kind appointment, Art makes its appeal to the human mind for good through all the avenues of sensation; but chiefly through the two organs of sense highest in their nature and mission, the ear and the eye.

Cousin, the eminent French metaphysician, remarks in his Lectures on "the True, the Beautiful and the Good," that "all classification pre-supposes a principle" on which classes are arranged; "which principle serves as a common measure." In the fine arts, he says, "this common measure is nothing else than expression;" a word which he compares with the Greek "*logos*." "Expression," he adds, "being the supreme end, the art which most approaches this is the first of all arts." He makes sculpture and music the extremes; the former the least, the latter the most expressive of the arts proper. Painting he ranks as intermediate, being the art "nearly as precise as sculpture, and nearly as touching as music." Poetry he regards the highest of all, though not strictly a fine art proper.

The Fine Arts which address human emotions through the ear are in their elementary forms Music, Eloquence, and Poetry. Music proper addresses the ear with pleasant sounds disconnected from sentiment; eloquence, in sounds that may be indifferent or agreeable, addresses the reason by sentiment alone; poetry appeals to our emotional nature by the combined influence of the sentiment it embodies, and of the grace of its diction and the melody of its rhythm. Each of these has its own divisions and subdivisions, as well as its combinations with one or more of its own or of different classes. Music is melody when one voice alone is heard, or one part alone is performed; and it is harmony when different but concordant parts unite. Instrumental music is simple music; and vocal music is music and poetry combined. So eloquence and poetry have their classifications

and combinations. The histrionic art is eloquence combined with the charm of that "Action" of which Demosthenes spoke; or of this art joined with scenery addressing the eye. The opera, again, is music added to the histrionic art.

As to order of development music seems to have become an art, and as such to have reached comparative perfection much earlier than the Arts which address the eye. Jubal, who was "the father of all such as handle the harp and organ" is mentioned before Tubal-Cain the "instructor of every artificer in brass and iron;" as also Orpheus the leader in Grecian musical art preceded Dædalus the father of Grecian sculpture. Still more, in rank, the arts addressed to the ear are superior. Poetry, associated with music is made the chief of the Fine Arts by Plato in ancient, and by Cousin in modern times. Plato presents this in his picture of the last hours of Socrates, who speaks of the dreams he had had from his youth, in which a voice said to him "Socrates cultivate the Muses;" a mandate which in his youth he sought to obey as a sculptor, in his mature manhood as a philosopher, and in the last hours of life as a poet; writing in his prison before he drank the hemlock, first a hymn to Apollo, and then as the highest of all possible attempts a poem of fiction. Cousin says, "The art par excellence, that which surpasses all others since it is incomparably the most *expressive*, is poetry."

The Fine Arts addressing emotions through the eye are more numerous. *Drawing* is the first and simplest, and has its classes of outline, and shaded, plane and perspective, mechanical, architectural and topographical; to which are to be added engraving in its varied branches and photographing. *Sculpture* presents single figures or composite designs as decorations of architectural structures; and its finished works are reliefs or complete statuary. *Painting* has its subdivisions; according to the material employed in coloring, as pastelle or colored crayon, water and oil colors; according to the subject chosen as animal, portrait and landscape painting; and yet again according to the design of the painting or the object for which it is to be employed, as miniature and life size, scenic and finished. *Architecture* is the moulding and grouping of forms of plastic art in union with mechanical structures belonging to the useful arts. *Landscape Gardening* is the union of the architect's with the painter's arts; the constructing of varied forms of nature into one vast whole, and the shading and harmonizing of the tints distributed in nature as the painter arranges and blends them on his canvass. The *Decorative Arts* embrace fragmentary details of all the Fine Arts,

adding a wide range of inferior works not belonging properly to either the Fine or Useful Arts. The Study of Art opens thus a wide field for investigation.

CHAPTER II.

THE LOWER SENSES INDIRECTLY CONTRIBUTING TO THE IMPRESSIONS MADE BY ART.

The general division of the senses into five, and the recognition of the distinct sources of knowledge and of pleasure furnished by each of these senses may be observed in the opinions of men at every stage of philosophic advancement, among all nations and in all ages. There has, moreover, been a virtual division of one of these five, touch, into two orders of impressions, indicating a recognition of six distinct sources of knowledge residing in the different parts of which the body is made up.

Sect. 1. The General Relation of the Lower Senses to the Appeals of Art.

We have remarked that Kapila the great light of philosophy in India recognized the five senses of mankind and five elementary substances in nature, through which as means the senses gain knowledge of the external world. As the Indian philosophers, metaphysical in intellectual cast, made this theoretical distinction in philosophy, so the Egyptian "wise men," truly physical in their mental tendencies, embodied the same in art. While the Egyptian artists sought to address the eye by the massiveness of their Architecture and Sculpture and by the gorgeousness of their Painting, they made the impression of all these to be heightened by adding an appeal to the lower senses. The walls of their tombs, made to be the home of departed spirits still united to sentient bodies, covered with scenes of all forms of sensual delight, true to nature and admirable in art, not only show how in their life on earth the ancient Egyptians sought pleasure through every avenue formed by the Creator for its entrance to the soul; but they are also living witnesses of the fact that the true artist must be master of the whole range of human sensibilities, both the lower and the higher, and must make his work appeal to each of the human senses.

There is, as we might expect to find, a general relation existing between the different senses so far as the laws of pleasure derived

from them are concerned. This relation was the subject of frequent discussion among the ancients. Thus Cicero, seeking to illustrate the charm of a voice well modulated in the orator,[1] says, "How much more lively in beauty and variety of colors are many parts in new than in old pictures! which nevertheless, although they arrest us at first sight, do not delight us for any length of time, while we are permanently attracted by the very uncouthness and old-fashioned look which belongs to ancient paintings. How much softer and more delicate in song, the minor key and falsetto tones, than the sharp and shrill notes against which not only critics but the multitude itself exclaim if they are oft repeated. The same may be seen in the other senses; that we are not so long pleased with ointments prepared with the strongest and most pungent odor as with those of a medium character, and that what seems to smell of wax is more praised than that which smells of saffron; that in touch itself there is a limit both as regards lightness and softness. Yes, even the taste, which is the sense most voluptuary, and the one which is moved more than the other senses are by sweetness, how quickly it spurns and spits out that which is excessively sweet!" Thus too Young, the somewhat stern interpreter of Christian morals, finds a designed office for each of the senses in their combined delights.

> "In *senses*, which inherit earth and heaven,
> Enjoy the various riches nature yields.
> Give taste to fruits, and harmony to groves,
> Their radiant beams to gold and gold's bright fire.
> Our *senses*, as our *reason* are divine!"

The laws controlling the pleasures of the lower and higher senses are thus parallel because they are a family together; and the power of the Fine Arts over human sensibilities can never be appreciated unless regard be paid to the important relation which the gratification of the lower senses may be made to furnish as an auxiliary to the delights of the higher senses.

In considering each of the senses in its relation to art, the general distinction between the useful and the fine arts must be kept in mind; that the former are designed to secure utility, the latter to promote pleasure. The popular voice determines that Cookery and the preparation of Odoriferous Compounds shall be styled arts. If we inquire to which of the two classes mentioned these so-called arts belong, we seem compelled to refer them to the circle of the Fine

[1] Cicero de Oratore, III. 25.

Arts, since the aim of the professional caterer is not so much to promote utility as to minister to pleasure alone. Yet the conviction is an instinctive one that the pleasures of taste and smell are of a low order; that when combined with the higher pleasures they are subsidiary; and that when their sole gratification is sought, it is a mark of the degradation not of the elevation of the mind. It is only when these pleasures are associated with those higher in rank that they become dignified; and then they may even aspire to be courtly refinements.

Sect. 2. The Impressions of the Sense of Smell in its relation to Art.

The sense of smell seems to be restricted to the higher orders of the animate creation; while as a power for *cultivated* delight it belongs only to man. It seems evident that smell is not enjoyed, unless with few exceptions, in the three lower grand divisions[1] of the animal creation; while it is very imperfect, if it exists at all, in three out of four of the subordinate classes[2] of that higher division. The gift of this sense is therefore a specially restricted one, at least so far as its serving as a source of pleasure is concerned; and this consideration alone is sufficient to take this sense out of the class of mere corporeal agents made for simple utility, and to elevate it to the rank of those, which, as attributes of intelligent beings only, are made to be ministers to art and to its culture.

The office of this, as of the other senses in man, is two-fold; its first end being that of utility. As such it is made to be a guide in the avoiding of that which is injurious to the system; either when taken into the stomach in eating, or into the lungs in breathing. It would be natural therefore for us to pre-suppose that animals of lower organism would have no need of this sense, and therefore that they would not be gifted with it. In some of the higher animals, as the dog, it is a greatly developed organ and of essential service; in other animals, as the swine, its existence is only occasionally apparent. It may be doubtful, but of course it cannot be certainly determined, whether in any organized being it has the secondary office, which in the human organism it certainly performs, that of ministering to intelligent pleasure.

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[1] The Radiates, Molluscs, and Articulates seem to lack smell; the Vertebrates alone having this sense.

[2] Fishes, Birds, and Reptiles, seem to have no proper sense of smell.

So far as this sense is the source of simple pain as when affected by nauseous effluvia, its office is manifestly that of utility. In the peculiar delight given by the odors of flowers, when the honeysuckle and the orange-blossom load the air with fragrance, we must regard this sense as mainly, if not wholly, designed to minister to pleasure. When an odor is of that middle character, illustrated in the pungent spirits of ammonia, the half nauseous musk, and the cultivated fondness for an atmosphere impregnated with tobacco smoke, the office of this sense may be doubtful or double; while, moreover, it may have a relation of importance to those classes of works of art which appeal to the emotion of horror, pity, or disgust.

As the Author of all our pleasures has made the gratification of this sense seldom to serve its purpose alone, but whether for utility or pleasure to act but as a subordinate aid to its superior, so when art has attempted to copy the Creator's work and to extend the application of His design, human skill has found it wise to follow the Divine method. As the plants but gather the elements of pleasant odors, and distil and concentrate them, so the manufacturer of unguents and odorous compounds collects, refines, sublimes and fixes the scattered fragrance of organized plants and flowers, and of unorganized material elements. And this the professional perfumer does in order that the dweller in any one clime may have the odors of the Indies, just as he may have the flavor of fruits from the Ocean Isles, and as he may listen to the melody of the music and poetry, and may gaze on the beauty of sculpture and painting brought from foreign lands and handed down from remote past ages.

The classes of sensibilities which pleasant odors have been made to address, are those common to the appeals of the higher arts. Their offices are mainly three; to minister to social luxury and refinement; to arouse religious incitement and devotion; and to serve as tributes of affection and as counter reliefs amid the struggle of attachment which clings to and the disgust which puts away the corrupting form once loved. When Esther, the Jewish maiden, was "purified, six months with the oil of myrrh, and six months with sweet odors,"[1] that she might be acceptable as a companion to the pampered Persian monarch, and when Mary poured over the head of Jesus the "box of precious ointment of spikenard," and even "anointed his feet" with it, till "the house was filled with the odor of the ointment,"[2] these were the natural expression of the conviction

[1] Esther ii. 12. [2] Mark xiv. 3; John xii. 3.

common to all men that the fondness for agreeable odors has been implanted in us to be gratified as an instrument of social refinement and that not simply amid the luxury attending upon artificial society, but as the prompting of every sensitive spirit when moved by generous impulses. When, in the Old Testament at the first recorded offering by fire we are told that in the smoke of Noah's sacrifice "the Lord smelled a sweet savor," when we read that God directed Moses to tell the people of Israel to bring for the service of his sanctuary "spices for anointing oil and for sweet incense," and when again in the New Testament the great apostle to the nations can find no more expressive designation of the comforts for the body sent from pious friends, than this, "an odor of a sweet smell, a sacrifice acceptable, well pleasing to God,"[1] we are assured that it is not simply a Jewish notion, nor the fancy of a refined philosophy, but a power for good implanted in human nature which has suggested that the agreeable impression produced by pleasant odors may aid in bringing man's spirit into a fit temper for devotional service. Yet again when as a model of filial devotion a Hebrew son of princely resources resorted to an Egyptian art, to which his family were strangers, in order to express his pious regard to a deceased father, as we read in the record, "Joseph commanded his servants, the physicians, to embalm his father," and when, again, to honor the burial of him who in all things was a pattern for universal man, not only women moved by the impulse of feeling, but senators in their wisdom, "brought a mixture of myrrh and aloes," and "wound the spices in the linen cloths about the body of Jesus" on the night of his death, and, yet more, "prepared ointments and spices"[2] additional, and brought them on the morning of the third day to his tomb, this again is a confirmation of the fact that we are made as rational beings to be addressed for the highest spiritual ends through the lowest of the bodily senses with which our Maker has endowed us.

A place must then be given by the student of art to the consideration of this lowest sense in man. Its appeal is distinct though associated; for the rose is admired and always has been more than the peony, the dahlia, the camelia, which have equal beauty but no fragrance. Even the "lily of the valley" mentioned by Hebrew poets, loses to our imagination half its loveliness, when the rules of strict Biblical interpretation compel us to renounce the idea of the fragrant

[1] Genesis viii. 21; Exodus xxv. 6; Phil. iv. 18

[2] John xix. 39, 40; Luke xxiii. 56.

delight of our childhood, and oblige us to think of it as a gem of the sod equally fair indeed but without spicy odor. Still the claim of agreeable odors is recognized as *subordinate* in this association; for the modest pink, mignonette and heliotrope, with mild but exquisite spiciness of odor are outshone by the glaring stateliness of the althea, the trumpet creeper, or the multiflora; even more than the peacock outshines the nightingale.

As a study in art the power of this humbler sense has called forth genius to a remarkable degree. Among the Asiatics of every age and tongue, its influence for good has been perhaps most recognized; and therefore among Egyptians and Hebrews, Persians and Arabians, Indians and Chinese, the "art of the apothecary" has been celebrated by such men as Moses and Solomon[1] as a worthy one; while among Greeks and Romans and nations of modern Europe just in proportion to the general advancement and culture of a people has always been the dignity given to this same art. The wondrous extent to which art has carried the perfection and cost of fragrant confections is seen in the vases of alabaster found in the Egyptian tombs, still retaining after twenty-five centuries the precious odors imprisoned within them; and in the extracts made now in Arabia from our common garden flower called "Attar of Roses," so concentrated as to weigh even against pearls in its extreme value.

The question may still be an open one, whether this appeal in any of the three respects mentioned is best made by the artificially extracted and concentrated essences of the odors distributed in nature, or by the natural, simple, easy and graduated means which the Author of nature has employed in strewing flowers so profusely and universally over the world we inhabit. There are principles of manifest truth, however, which the more we consider them seem the more decisive in their reply to this inquiry. One of these is the suggestion of Cicero that moderate and unconcentrated odors such as those of flowers, are most *pleasing*. Another is the principle that an appeal to the sense of smell when alone addressed, as it is in concentrated odors, seems low and unworthy; while when it is but *subsidiary*, as it is in the flower that impresses more by its beauty than by its fragrance, the enjoyment of this lower sense becomes an elevated pleasure. A yet more important principle of decision is the universally recognized fact that God has made his own works to lead us to thoughts of Himself, while man's lead us to think rather of men;

[1] Exodus xxx. 25, 35 and xxxvii. 29; Eccl. x. 1.

the natural flower, with its fragrance and beauty, speaking directly of its Author to man's soul, while the artificial flower has only an indirect and faintly echoing voice calling us to the Great Maker of all being. So far as the sense of smell is concerned, art must rather employ than copy nature to produce its impression. The poet has struck the chord that vibrates in universal human nature in the call, "Bring flowers;" "flowers" for the joyous, and "flowers" for the sad; "flowers for the bridal wreath," and "flowers for the early dead." To perfume as well as to adorn, the flowers themselves, the Creator's own carved and scented vases, have been and ever will be chosen for the festal board and convivial hall, for the coffin and the bier, for the altar of prayer and the temple of praise. At the ancient Egyptian feast servants stood with flowers and held them, when desired, to the nostrils of the guests; in Turkish cities the corpse of the dead is borne through the streets uncoffined but loaded with flowers; the simplest shrine of the Madonna at an Italian cross-road is festooned with flowers; and modern advancement and Western refinement has found no method of improving the simple custom suggested alike by refined philosophy and by rustic intuition. The artist that has most success in taking captive by his works "the whole man," will be found to be the one who has not "despised these little ones," the *flowers*, in his estimate of the power of art; but who has carefully studied both when and where to introduce them into the productions of his pencil, and what kinds will speak best to the two combined senses of smell and of sight.

Sect. 3. The Impressions of the sense of Taste in its relation to Art.

The sense of taste in man, as that of smell, performs a double mission; the first office being that of *utility*. Ordinarily fruits of which we might be tempted by hunger to partake, but which would be injurious if taken into the stomach, are made to have an offensive flavor which makes them distasteful. Generally the most nourishing and healthful food is not specially agreeable but simply not disagreeable; possessing no special flavor, and offering no temptation to the palate when the need of food is once supplied. It is perhaps hardly proper, strictly speaking, to attribute to ordinary food the power of addressing the sense of taste; for it is the craving of hunger, a mere organic muscular discomfort, that prompts us to take food or drink when needed. This craving is opposed to, rather than identical with, the pleasure of the palate; since we reject unsubstantial delicacies, how-

ever tempting at other times, and choose the simplest beverage water and the plainest aliment bread till hunger and thirst are sated. The pleasures of taste proper seem to begin, rather than to end, when hunger is sated.

It is doubtful whether taste in its stricter signification is applicable to any creature but man. The lower orders of creation, even up to the bird, seem as destitute of taste, even in the first sense referred to, as they are of smell. And when the very highest class of quadrupeds are regarded, the indications of the possession of taste as a designed minister to pleasure seem to be wanting. As their necessities are only corporeal, and not spiritual, we can see no end to be accomplished by the gift of a source of gratification designed for an intellectual and a moral being. As their indulgence of the palate ceases when food sufficient is partaken, the sense of taste in them seems to be rather that lower one immediately associated with the relief of an organic craving, the merely indifferent flavor of our ordinary food. Certainly the Creator has given them no capacity to culture the higher gift like man; they do not gather and store the green and sweet fruits of summer for winter gratification; they do not go over the sea to seek new luxuries; nor have they any scientific cooks, or convivial banquets with viands studiously compounded for an increased appeal to the sense of taste. We seem compelled, therefore, as a just deduction, to place taste, using the word in its higher and truer signification, as we did smell, among the attributes of man as man, designed by the Creator to minister to a higher than corporeal delight; and we must regard it as indirectly at least an art sensibility.

For manifest reasons this sense has been more cultivated as a source of pleasure, and its gratification more studied as an art than the sense of smell. As smell in its lower office of utility is but secondary to taste, designed to be an aid in guiding the palate to appropriate food, so smell as a source of pleasure is made subordinate to taste. A feast is not made mainly to delight the nostril with odors; and if, either from mistaken judgment or from a less commendable reason, the lack of that which satisfies the palate be covered up with a profusion of floral decoration there is a demand in human nature which can hardly be reconciled to the great void.

The ends sought by an appeal to this sense are the same as those suggested by art in its higher walks. These are the same three already alluded to; individual gratification, social culture, and religious refinement. That is in any age or land a happy home where

the skill and industry of a ready Sarah[1] spread every day a tastefully prepared though frugal meal; as that household is always a cheerful one among whom a fondness for flowers or music reigns. From the days of Job,[2] in the Occident as well as in the Orient, birth-day feasts are scenes of pleasure filling up the whole year with bright anticipations and pleasant recollections. Yet more the simple custom among shepherd princes of softening and subduing prejudices and animosities, and of awakening and fostering ties of brotherhood and neighborhood by the sacred social bond of a feast has found no preferred substitute since the days of Isaac;[3] but to this day at European as at Asiatic courts, from the greatest and oldest of aristocratic capitals, that of China, quite round the world to the metropolitan city of the youngest and most democratic of States, nothing has been found to take the place of the banquet as a power to heal old grudges and bring to a point pending negotiations either of personal or of national importance. While, moreover, these two lower ends have always been subserved by this sense, He who knew the nature which He has formed, not only enjoined on His ancient people the attendance of every man at the three annual feasts,[4] because of the religious influence they would exert, but He also established as a permanent power for religious remembrance the Lord's Supper to be observed as long as man is an inhabitant of earth. So important indeed did the three-fold end of the gratification of the palate appear to the Divine Author of the perfect moral system in the New Testament that the Great Teacher himself set the example of attending not only on the established public feasts at their regular seasons, but also of partaking private banquets, whether spread by one of his disciples or by personal friends, whether invited by a Pharisee or a publican;[5] while too the chief expounder of his system taught Christians that they should still attend upon the secular and religious festivals of their Grecian and Roman neighbors and fellow-countrymen.[6]

The dignity to which this sense may be made to rise is seen in the fact that its culture has been most advanced by men most devoted to philosophy, to literature, to oratory, and to the pursuits nearest allied to true art. Socrates and Plato, though so different in temperament, were drawn out in highest discourse at the banquet table;

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[1] Gen. xviii. 6.
[2] Job i. 4.
[3] Gen. xxvi. 30; xliii. 16, 34.
[4] Exod. xxxiv. 22, 23.
[5] Luke ii. 42; v. 29; vii. 36; xiv. 2, 12.
[6] 1 Cor. viii. 8; x. 27; 1 Tim. iv. 3.

Aristotle, whose genius embraced the whole range of science and philosophy in his day, cultivated his taste to the nicest delicacy in judging of the flavor of a fish. Around the honored board of Mæcenas gathered in the Augustan age not only poets and artists, but also sages and orators of the greatest name; and even Cicero was never happier when retired for his philosophical studies than amid the dinner table disputations which have made the name "Tusculanum" forever famous. Not only such men as Garrick, Curran, and Sheridan, but also the scholarlike Johnson and Burke, gathered their inspiration amid the tempered convivialities of the club-room supper. No one can doubt that there has been often an excess in the resort to the pleasures of the palate; and that this excess has tended to render its voluptuousness a means of degrading instead of refining man's nature. Such an instance is found in the extravagance of Cleopatra's feasts given to Antony at Alexandria, in Egypt, when the queen dissolved precious pearls in vinegar, and drank the liquid to add to the reputed costliness of the banquet. An instance somewhat kindred is found in the dedicatory ovation at the opening in 1518 of the celebrated Farnesian palace of Rome, erected by a rich banker, to be a museum as well as itself a Monument of Art; when, as part of the banquet at which Pope Leo and other dignitaries were present, three fish were served up whose cost was two hundred and fifty crowns, while the golden dish that held them, after they had been served, was thrown into the Tiber. The abuse of the banquet however, is like the adulteration of coin; it is a concession to the real value of that which it counterfeits.

The close association of this sense with the intellectual has in part perhaps led to its employ as the expressive designation of that power, by which the mind forms a judgment of beauty in art. Ever since the earliest known Oriental penman conceived and thrice recorded the expressive comparison, "The ear trieth words as the mouth tasteth meat,"[1] the word "taste," borrowed from the corporeal sense allied so strongly to art, has been the almost universally chosen figure of speech by which to designate that power of the mind which judges of the beautiful. The artist should study the manifestation of this corporeal sense that he may in his works appeal to it in itself; and more especially that he may appreciate its high relationship to that purely intellectual nature in man which he must strive to address in his works.

[1] Job vi. 30; xii. 11; xxxiv. 3.

Sect. 4. The Impressions of the sense of Touch and its relation to Art.

Dr. Reid, whom so recently the acute Sir William Hamilton has tacitly admitted to be the great master in the Scotch School of Metaphysics by devoting so large a measure of time and genius to his works as an Editor and Annotator, begins his chapter upon "Touch" with this paragraph; "The senses which we have hitherto considered, are very simple and uniform; each of them exhibiting only one kind of sensation, and thereby indicating only one quality of bodies. By the ear we perceive sound, and nothing else; by the palate, tastes; and by the nose, odors. These qualities are all likewise of one order, being all secondary qualities; whereas, by touch we perceive not one quality only, but many, and those of very different kinds. The chief of them are heat and cold, hardness and softness, roughness and smoothness, figure, solidity, motion, and extension."[1]

This complex character of what was necessarily comprehended under this general sense indicated, of course, that a nicer analysis was required, and that a classification of effects so different should be made which would group them under causes or sources that are distinct in the human organism. An attempt at this, though discursive and too controversial, by Dr. Brown,[2] the Scotch critic upon Reid, was the modern reviving of an analysis, as Hamilton shows, the germ of which can be traced back to Aristotle and his predecessor Democritus. This analysis is founded upon the manifest distinction between the mere tactual impression made upon the skin by heat and by contact with external bodies, and that entirely distinct impression produced by pressure upon and tension of the muscles; though even Hamilton[3] has not devoted to this subject his ordinary care in discrimination. A new light is thrown upon this whole field of metaphysical inquiry, the necessity for careful discrimination is made more manifest, and the nature and extent of a just analysis becomes more apparent when this sense called "touch" with its multiform elements is viewed in its relation to Art. It will be found necessary in considering the *pleasures*, as distinguished from the *knowledge*, derived through this compound sense, to make a three-fold division.

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[1] The works of Thomas Reid, D. D., with Notes and Supplementary Dissertations by Sir Wm. Hamilton, Bart. Edinburgh, 1854.

[2] See Lects. 23d to 25th in Brown's Phil. of Human Mind.

[3] See Note on Dissertation D, in Appendix to Reid.

There are most manifestly three classes of agreeable sensations made upon the human organism, aside from those derived through the senses of taste and smell, of hearing and sight. The first of these is the pleasing impression made upon the *surface*, on the *skin*, by gentle heat or the slight stroke of a soft body, solid, liquid, or gaseous, as of smooth fur, of lukewarm water, or of a spring zephyr; and these are the pleasures of touch proper. The second is the agreeable sensation of *pressure* more or less gentle on the muscles, as in embracing, and of action in them as called forth by the gambols of animals and children, and by gymnastics and the dance in youth; and these are the pleasures of what may be called muscular tension, or for brevity's sake simply "tension." The third is the exhilarating excitement arising from any *stimulus* acting upon the nerves, and thence upon the brain; the seat of this impression being neither the superficial skin or the muscles underlying the skin, but the nervous fibres imbedded within the muscular system, centering in the brain; its producing cause being either a material stimulant acting through the digestive organs, or mental excitement operating through the brain on the nervous system; while its distinctive character may be perhaps appropriately designated by the term "nervous stimulation," or simply "stimulation." It is the first of these three classes of pleasurable sensations, the sense of touch proper, whose relation to art is in this section to be considered.

The sense of touch is, as Aristotle argues, common to all animals; its possession, in fact, being the discriminating test by which plants and animals are separated one from the other. The most perfect development of touch, the same philosopher argues, is found in man; and man is dignified as a higher being than any mere animal even so far as the knowledge to be derived from this sense is concerned. It indeed seems a wonderful faculty when the blind child is heard reading by touch with all the fluency of one possessing eyes; and when the man of mature years entirely without sight is seen to distinguish the different metals and woods, and even the colors of paints simply by their feeling. While thus superior to any animal in the power of touch as a source of utility, man is not only superior to but distinct from animals in the pleasures derived from this sense; since in him it ministers not simply to corporeal delight, but is an aid to the higher and intellectual pleasures of Art.

Touch proper is but a surface impression; whether ministering to utility or pleasure. These impressions seem limited to two classes. The first of these is the affection of heat either external or internal.

When the atmosphere without is either very much warmer or colder than the ordinary natural temperature of the body, an impression of pain is produced; and the seat of this unpleasant sensation seems to be the skin or surface of the body. When again upon a cold day the rays of the sun or the glow of a warm fire falls on the body, a sensation peculiarly agreeable is experienced; the seat of which pleasure, as of the pain just noticed, is the skin. Since, however, a similar pleasurable sensation pervades and permeates the entire body when the genial heat arises from within, either from the digestion of a nourishing meal, from imbibing a warm and stimulating draught, from deep inhaling of the fresh morning air, or even from the covering of a warm bed, it is doubtful whether the pleasurable impression of heat can be restricted to touch proper.

The second class of impressions belonging to touch proper are those arising from gentle *contact*, accompanied always with *motion*, of a material agent upon the surface of the body. The agent may be in a gaseous, liquid or solid form. A most agreeable sensation is experienced from the soft brushing, the mere "kissing" as it has been poetically called, of the passing breeze; and that entirely aside from its character either for warmth or coolness. This is one of the luxuries of sea life; the gentle fanning of the light breeze, and the rude yet exhilarating friction of the sweeping gale. Dr. Franklin is said to have regarded a cold air bath, received for a length of time in a strong gale on the naked body, both for healthfulness and pleasure, next to a cold water bath. Of the same nature is the luxury of the bath in water; in which, again, the agreeable sensation arising from heat or cold in the water is to be kept distinct from the pleasant impression produced by the motion of the water. This appeal to the touch may arise either from laving the skin in washing with the hand, or from the dripping of the water over the person in the shower, or from its coursing past us in the river current, or from our cutting through it in swimming. Still again when any soft or smooth solid substance as the sponge or towel in washing, the flesh brush in rubbing, the comb in cleaning, the hand in fondling, is made to pass gently over any portion of the body, the pleasure of this sense is more or less exquisite.

Every portion of the body is capacitated for this pleasure; but each portion has its special amount of susceptibility, and some their special forms of pleasurable excitement. It is worthy of note that the portions of the skin most susceptible and most employed when touch is a source of utility are very little if at all affected by any

source of pleasurable impressions. Thus the lips which are so sensitive as to be sometimes employed by the blind as the nicest tests in touching, and the inside of the fingers the chief instrument of this sense, seem to have no share in the pleasant impressions of the rest of the skin; or if they are indeed common partakers with the rest of the skin in affording agreeable sensations we are so accustomed to the impressions of utility that those of pleasure are there lost. On the other hand, the cheek and back of the hand though least sensitive to impressions that would indicate the presence of anything injurious because constantly exposed, are the common recipients of the comforts of the fanning breeze, of the laving stream, and of the fondling caress.

The exquisiteness of the pleasure which may be derived from this sense when that of any other is denied, is the true indication of the value and capacity of this susceptibility. Children deprived of sight show this in their inclination to feel of and rub over their hands any soft substance, such as velvet or fur, glass or ivory. In the rare cases, where both sight and hearing are absent, and the higher pleasures springing from both these senses are unknown, this only source of gratification left, mediate as it is between the highest and the lowest senses, and united with or separate from its allied muscular attendant, appears to be a never exhausted source of varied delight. The blind deaf-mute will sit or stand for hours holding a piece of fur, rubbing it with apparent ecstasy over every portion of the body that they can lay bare; the Creator having opened to them a universe of delight in a field never entered by those absorbed in the pleasures of the other senses. Were the emotions awakened by the Fine Arts limited to the impressions of sight and sound, then this most intelligent class, deprived of the two higher senses, could have no Art sensibility.

The relation of "Touch" proper to Art is perhaps the least intimate and important of any of the lower senses; though that of its attendant sense, the muscular, is the closest and broadest. The artist, however, can never forget that touch has a relation to art. When studying his design and grouping the conceptions that are to enter into his work the representation of this form of delight, in the evening breeze or the summer shade, in the endearing caress of animals or men, will hardly escape the thought of the true student of nature and of the power of art to move. Lightness of touch, and its exquisite effect on marble or canvass, as well as on the viol string or the organ key, will be constantly suggesting to the painter, the

sculptor, the musician, the relation, by analogy at least, which the sense of touch has to his art. Most of all the gentle impulses of the soul that fall pleasantly on kindred spirits, of which those of the zephyr, the stream, the hand are the types, must always be present to control the mind and the heart of the artist in conceiving as well as in executing his works; and if he has studied thoroughly the theory of the sense of touch and of its pleasure, the chastening influence of a right mental bent early received, will prove a habit in his art that will give the charm of a subdued tone to everything he touches.

Sect. 5. The Impressions of Muscular Tension in their Relation to Art.

The seat of the Sense of Tension, as already observed, is in the muscles underlying the skin, having their attachment to the bones and general internal structure. The track of the impressions made upon this sense is not therefore, as in touch, superficial, upon the extremities of the nervous fibres whose minute and delicate terminations in the skin are so peculiarly sensitive; but it is a dull pressure felt on the body of the nerves imbedded in the mass of the muscles. These impressions arise from two classes of muscular action; the pressure of an external object from without, and the tension of self-action from within.

The knowledge obtained through muscular tension is of two kinds; knowledge of qualities of material things distinct from our bodies communicated to the mind by the pressure of those objects on our muscular and bony framework; and knowledge of the position actual and relative of different portions of our bodies by their angular separation, their gravity and other muscular impressions. The blind man learns the form of a body, as we in the dark, by clasping it; he ascertains its composition as hard or soft by pressing upon it, and its weight by lifting it. From the amount of pressure exercised by the will on the muscles which move the eye, the tongue, the shoulders, the elbow, the thigh, or the knee, we know so perfectly how to adjust the direction and amount of their angular motion, that not only the skill of the engineer, of the pianist, and of the gymnast, but the ordinary powers of a child in directing his eye and his hand, and of preserving his balance, are a wonder to us. It is not by touch proper, but by the impression of muscular tension, that this knowledge is gained and employed. In fact, the sense of touch, so called, in almost all animals, except man, is but an impression of

pressure on the shell, the feathers, or the thick hide which covers them; like to the impression on man when the sense of touch proper is lost underneath thick clothing. As Sir Wm. Hamilton has clearly, and yet only partially, shown from the treatises of Aristotle, Galen, and a line of acute thinkers succeeding them, this source of knowledge has ever been recognized in metaphysical analysis; Aristotle designating it "motion," the Germans following him "the muscular sense," while Hamilton unites both designations in the characteristic expressions "locomotive energy" and "muscular tension."

As the knowledge derived from muscular impressions is of two classes, so are their pleasures. The first of these is that produced by pressure from without. It is seen in the manifest pleasure of the infant who has as yet attained no power of muscular self-action, when it coos with satisfaction at the scrubbing of the bath, and crows with delight at the fondling hug of its nurse. The pleasure of the kiss and the embrace in youth and mature years is of the same character. Their dignified office as the natural accompaniment of the joy of meeting and the sorrow of parting, has made the pressure of the hand, of the lip, and of the breast, a pure and noble gratification; a delight, indeed, dignified by the allusions of the best and the wisest of men guided by Divine inspiration.[1] It may be added that the cleansing kneading of the muscles practiced in Oriental baths, so exquisite a luxury to the Western traveler, is of this class of pleasures; while the curative kneading of the flesh in diseases of various kinds resorted to by the physicians of India and among many rude tribes, both in ancient and modern times, is a restorative affording pleasure as well as profit.

The second class of agreeable muscular impressions, is that resulting from the tension of the muscles in the exercise which forms their healthful play. The development of this source of delight in the child is somewhat later than that just mentioned; first the upper, then the lower limbs beginning to fulfill their mission, and at the same time to manifest a pleasurable sensation in their constant motion. Next follow the gambols of childhood, which Goldsmith has embodied in the line,

"The playful children just let loose from school."

This delight, shared by the young of all animals, takes the place in

[1] Gen. xxix. 11; xxxiii. 4; xlv. 14, 15; xlvi. 29, and Acts xx. 1, 37.

these irrational creatures of the higher pleasures of sense, and is to them a source of permanent and ecstatic delight even in later life, as Cowper has so graphically pictured in the lines,[1]

> "The bounding fawn, that darts across the glade
> When none pursues, through mere delight of heart,
> And spirits buoyant with excess of glee;
> The horse as wanton, and almost as fleet,
> That skims the spacious meadow at full speed,
> Then stops, and snorts, and, throwing high his heels,
> Starts to the voluntary race again;
> The very kine, that gambol at high noon,
> The total herd receiving first from one.
> That leads the dance, a summons to be gay,
> Though wild their strange vagaries, and uncouth
> Their efforts, yet resolved with one consent,
> To give such act and utt'rance as they may
> To ecstasy, too big to be suppressed."

In youth sports of the turf, such as cricket and the foot-ball, racing and leaping, wrestling and boxing, a more studied and less unmeaning employ of this same delight, follow. With this class of sports, at first rude, art allied itself more and more; until a system of artificial exercises became in vogue, which among the Greeks took the name of *gymnastics;* so called, because for the more unrestrained play of the muscles the contestants entered the arena naked. The fascination of this class of sports led to an excess and abuse. In Greece, the theoretic Plato, as already mentioned,[2] classed education under two heads: that of "Gymnastics" for the body, and that of the "Muses" for the soul. The practical Aristotle, however, living somewhat later, and as a teacher responsible for the training of such a youth as Alexander, having carefully noticed their effect, calls attention to the fact that "those accustomed to gymnastic exercises bear the cold with more difficulty than those not conversant with them;" and adds the reflection: "The same habit is not advantageous to both health and strength."[3] The equally practical Romans, and the Egyptians as the teachers of both Greeks and Romans, had the same view of the natural, healthful and artistic delights of muscular exercises when tending to the excess of the Greek gymnastics. Diodorus, in the Augustan age, records[4] of the Egyptian educators, "They think that by the exercise of daily

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[1] The Task, B. VI.

[2] B. I., c. i., § 5.

[3] Problems, Section vii. No. 10.

[4] Diodorus Siculus, B. I., c.

wrestling youth improve in their strength but for a little time, and that with a great deal of hazard; while they gain no advantage at all as to the health of their bodies." This, however, as an abuse from over-straining, is no more an objection to the enjoyment rightly employed than over-eating is an objection to eating at all.

Among these last mentioned exercises the Dance finds place; to whose excess and abuse a double objection exists. In illustration of its use as a natural diversion, in the age of patriarchal simplicity we read of parents, that "They send forth their little ones like a flock; their children dance;"[1] while in the latest and darkest period of Judah's history the promise of the distant future is thus pictured: "Thou shalt go forth in the dances of them that make merry;" "then shall the virgin rejoice in the dance, both young men and old together;"[2] while the wisest of men in his old age utters as a permanent truth, "There is a time to mourn and a time to dance."[3] As expressing patriotic exultation at military success, we read of Jephthah in the days of the Judges of Israel, that when returning from victory in battle, "his daughter came out to meet him with timbrels and dances;"[4] and also in the days of their Kings that when David the young hero in faith returned victorious, "the women went forth to meet Saul, singing and dancing with tabrets, with joy, with instruments of music;" "in their dances" chanting in chorus the praises of their heroes.[5] Yet more, we are told that as an hallowed act of devotion, the prophetess, Miriam, the sister of Aaron, and of Moses, took "a timbrel in her hand," while "all the women went out after her with timbrels and with dances;" and that David, both in practice and in inspired song, made dancing a religious act.[6]

Among the Greeks in their earliest days an equally elevated position was given to the dance, one of the nine Muses being made its presiding genius. Homer speaks of the dances of the illustrious men who were suitors for the hand of the fair Penelope as a manly accomplishment; and represents even sage Ulysses as an admirer of the skill of the dancers who entertained him as a guest at the Court of Antinous.[7] Xenophon describes approvingly a dance at a feast at which Socrates was present as a guest; and Plato argues in his "Laws" that the dance should be among the Greeks as it was among

[1] Job xxi. 11. [2] Jer. xxxi. 4, 13. [3] Eccles. iii. 4.
[4] Judg. xi. 34. [5] 1 Sam. xviii. 6; xxi. 11; xxix. 5.
[6] Exod. xv. 20; 2 Sam. vi. 14, and Psalm xxx. 11.
[7] Hom. Odys. viii. 265.

the Egyptians founded on religious ideas. The Greek dances proper were in keeping with this chastened idea, and were very simple in their movement and expression. Such was the dance introduced by Theseus in the early times, alluded to by Plutarch in his life of that early Athenian hero.[1] It was quite a different view which the best Greeks entertained, however, when from the wild tribes in the Phrygian mountains back of their Asiatic colonies the frantic war dance of the Corybantes became a favorite exhibition for an enervated and unwarlike gala gathering instead of a training for their warriors; when, too, from dissolute Crete came the Bacchanalian dance, which was but a representation of a drunken debauch; and when again from Persia there stole in among the monogamist Greeks, true to the law of nature in their conjugal relations, the licentious dance of the Hetaræ, or concubines, a name synonymous with that of harlot. From this time the dance assumed the character in two respects objectionable, which Aristotle among the Greeks, and Diodorus and Cicero among the Romans, attribute to it; first, because it induced physical weakness from the over-exertion to which its exciting influence tends; second, and especially because of the lascivious associations of which it was regarded the direct expression. During the better times of the Roman Republic it was deemed disgraceful for grave men or even ingenuous youth to engage in any form of the dance; and that because of the depraving tendency to which Cicero twice refers in his volume on Moral Duties, as also in his Orations.[2] Julius Cæsar introduced the Pyrrhic, or war dance, from Asia Minor, into the games of the Roman theatre;[3] and the tendency was so rapidly downward, that Nero degraded the Imperial purple by dancing publicly on the stage.[4] The uncovered walls of private houses in Pompeii now reveal to what an extent, not only the manly war dance, but the licentious waltz of the courtesan had been carried. The Great Teacher appearing near this crisis to call back Greeks and Romans to "the true," as well as the good, in every relation, seems to have himself made and to have inspired his apostles to make a just discrimination between the simple home expression of delight at a son's return, and the depraved character of the dance of the adulterous woman's daughter, lustful in expression and linked with an unnatural spirit of hatred to the just man who had reproved vice.

[1] Plut. Thes. v. 21.

[2] Cicero de Officiis, I. 35. Pro Murena, 6, and in Piso, 10.

[3] Suet. Jul., 39.

[4] Dion. Cass., lx. 7; Suet. Nero, 12.

The "Chase," again, is one of the favorite resorts of men in rude and polished ages as an exhilarating pleasure of muscular action; though the higher principle of intellectual delight in successful skill has also its place in this hardy and somewhat hazardous amusement. The poets even before Homer had exalted it to the dignity of an art; and have ascribed to it an ennobling and refining influence. Moses quotes a couplet of poetry extant in his day and dating back to a period just after the flood, in which Nimrod is thus celebrated,

"Even as Nimrod mighty in hunting before the Lord."

The Greeks and Romans showed how honorable a place they gave to this athletic exercise by installing a deity, Diana the huntress, as the special patron of the chase; and the poets of classic times made it one of the marks of an ancient hero that he excelled in this art. The English poet, Wm. Somerville, in his poem entitled "The Chase" traces the history of hunting from Nimrod; mentions its introduction into England by William the Conqueror, and dwells at length on its influence in refining the before rude manners of the British nobility. In tracing it thus to Nimrod, who first "made war on beasts," when, as yet

"New and unpolished was the huntsman's art,"

he attributes the principle of its origin as an "art" not simply to the love of the sport but to the need of food and sacrificial offerings; so that as he says

"Devotion pure
And strong necessity thus first began
The chase of beasts."

To this class of pleasures, must probably be attributed, so strangely depraved is human nature, the fascinating charm of "War" itself, as in all ages it has been waged among mankind. The measured tread of files of men in marching, with all the studied evolutions of the military drill, which forms the essential training for war, are directly pleasures of muscular action, accompanied with the exercise of intellectual skill; and the hold upon the human mind which military exercises gain, the tenacity of their power even in old age upon the veteran soldier, is witness to the fascination attending this delight. Partisan warfare, the scout, the raid, the ambush, and even the dashing charge of the pitched battle and the slow approach of the regular siege, are but the hunt and the chase of a higher order of

beings. The conflict taxes to the intensest energy the exercise of the mind indeed; but the muscular frame has the greater strain, and its exhilarating play is the coveted pleasure that outweighs the pain of wounds and even of mutilation. How much war is a pastime, having its longed-for season, is the subject of sacred as well as of profane history. In the Sacred History of the Old Testament, "the time that kings go forth to battle,"[1] is a period of the year as marked for its interest as is the "time of the singing of birds."[2] In fact if any being from another world should chance to become possessed of the literature of the world, of the poets from Homer to Scott and of the historians from Herodotus to Macaulay, and should be asked, 'for what man seemed to regard himself as specially made, and in what he most gloried and found pleasure,' he would probably decide that it was in the physical exhilaration that attends military prowess.

As already intimated, the association of art with the pleasures of muscular action was so apparent to the ancient Greek that one of the Muses, Terpsichore, was appointed to preside as its head. Perhaps, since Sir Wm. Hamilton has made locomotive energy in general to be synonymous with the muscular sense, all those impressions of delight which spring from "beauty of motion" as treated by Lord Kames and others, should to a certain extent find place here. In one point of view, also, the study of attitudes and of every variety of muscular effort represented in such sculptured forms as the Dancing fawns, the Boxer, the Wrestler, the Huntsman, the Warrior, and Hercules in his varied labors, all have their origin in this impulse of human nature; while a new light is thrown on the painter's picture of children playing and men and women toiling, of men and beast bounding in the chase, of horse and footmen struggling in bloody conflict, and even of angels soaring in clouds or ether. The consideration of the Sense of Muscular Tension is certainly in place in an Introduction to the general study of Art.

Sect. 6. The Impressions of Nervous Stimulation in their relation to Art.

Beneath the skin and within the muscles, acting in part as their ministers, lie the nerves; which have like other parts of our nature the two-fold office of ministering to utility and to pleasure in man. The two classes usually treated of by physiologists, the one called

[1] 2 Sam. xi. 1. [2] Song of Solomon, ii. 12.

afferent or nerves of sensation terminating in the skin, the other called efferent or nerves of motion having their attachments to the muscular fibres, cannot be separated entirely from the consideration of the senses of Touch and of Muscular Sense already considered; since it is the impressions made upon these nerves in those organs of the body that at once furnish the knowledge and afford the pleasure ascribed to those two senses. In addition, however, to the two kinds of impressions on these and other nerves properly distinguished as those of touch and of muscular tension, there is a class of impressions quite distinct in their nature, in their source, in their centre and seat, and also in their pleasures from the two previously considered.

The impression distinctively called "nervous" as separate from all other impressions made on the nerves is a feverish flutter of the whole nervous organism, the brain included, which no one thinks of referring to an action upon them through either one of the bodily senses; and which it would be absurd to call the impressions of smell, taste, touch, tension, sight or hearing. They are produced in part by external stimulants introduced into the body in a solid, liquid, or gaseous form, such as tobacco, opium, tea, coffee, alcohol, ether, exhilarating gas, or some other kindred agent which acts upon the nervous system. They more generally originate from a cause within familiarly known as self-excitement; whose abuse is characterized as "working one's self into a phrenzy;" a state of mind exemplified in devotees of every religious system, in public speakers of every class and country, and even in the wild enthusiasm of a whole people lost in the whirl of a show or carnival.

It is doubtful whether animals below man have participation with him in this peculiar affection called nervous excitability. Certainly they have no inward power of mind to act as an exciting cause; and we have no evidence that they resort to any agent in nature as an outward source of nervous stimulation. They certainly shun those plants, such as tobacco and the poppy, from which in their unprepared and natural state man finds a narcotic stimulant; nor have they any means of obtaining by decoction, fermentation or distillation, the manufactured articles which give this stimulus to man. It is man, the intellectual being alone, whose intelligence prompts him to resort to nervous stimulation as a source of pleasure.

How fascinating the pleasurable sensation of this part of man's nature may become is manifest from the resistless spell it seems to throw over all the faculties of the youth, or the man who gives himself up to the indulgences, either outward or inward, which

produce it. The youth very soon discriminates between the momentary gratification of the palate coming from the sweetened draught, and the intoxicating sensation that follows from it; and very soon he prefers the latter separate from the former. Very soon, too, even the nauseous taste of tobacco ceases to be disagreeable; because of the exciting influence produced by it. When, too, the almost delirium of nervous excitement arising from hilarious society where wit and humor kindle and sparkle, when the first fresh glow of personal success in speaking under the complete possession of body and soul which absorption by one's subject of discourse produces, when the entrancing thrill of imaginative composition in prose or verse, or even the reading of poetry or romance, history or the drama, philosophy or science, come to be tasted, when either of these forms of nervous stimulation arising from the ecstatic play of one's mental faculties is first experienced, a new world of surpassing delight breaks on the young student. It is a source of pleasing exhilaration to which mature manhood fondly resorts, and which even in old age, still holds its devotee spell-bound. And when we search to find in what class of pleasures these delights so far as they are bodily and not purely intellectual must be placed, we find it impossible to refer them to sight, sound, taste, smell, touch, muscular action; to anything except to the idea of nervous stimulation.

The resort to this source of pleasure is seen in the earliest and latest history of mankind. Of the second great head of our race, Noah, from whom all since the Deluge have descended, we read that having "planted a vineyard," he "drank of the wine thereof" until "he was drunken." Among nearly all nations rude and refined, the drinking of fermented, if not of distilled liquors, and the smoking of tobacco or some kindred article have been used as nervous stimulants. The inspired record of the Old Testament states with the same positiveness that the Lord "causeth the grass to grow for the cattle," and "He giveth herb, bread and oil" to feed, "and wine to make glad the heart of man."[1] Beyond the Old Testament precedent we have the example of the perfect man, who tempted in all points as we are, "drank of the fruit of the vine," though unjustly charged as a "wine-bibber."[2] As wide spread, too, among men have been the delights of this same excitement coming from the mind's employ on themes for the imagination. Both true and false prophets like Samuel and Saul, as well as bards and seers, like Chalcas among

[1] Gen. ix. 21; Psalm civ. 15.

[2] Matt. xxvi. 29; Matt. xi. 19.

the Greeks before Troy, orators and poets in every age and land have spoken and written under a nervous stimulus which has seemed even in its outshowing in their bodily nature to be the working of a supernatural power.

As with the other pleasures of sense, the end sought through nervous stimulus has been three-fold. As an individual gratification both the external and internal sources of stimulus mentioned have been resorted to. For the accomplishment of important public ends, the gaining of the ear and the taking possession of the mind and heart of men for good or evil, public speakers have sought to attain this power of self-excitement. The wonderful energy of the double stimulus of the wine cup and of the natural enthusiasm awakened when uttering a popular harangue, that power by which the speaker sways as he will the throng of even stolid men, has been a theme of admiration and an attainment most coveted in all ages of man's history. Even as a means of religious awakening and determination, there can be no question that the power of self-excitement peculiar to great leaders in religious reform, like John Knox, Martin Luther and George Whitefield, has been, though peculiarly liable to abuse, a mighty instrument for good. It is akin certainly to that fervor of the apostle to the nations whom many believers regarded "beside himself," and whom a philosophic Roman hearer called "mad;"[1] but which the great Rhetorician Longinus, who lived near his day and criticized him merely as an orator, mentioned as the great element of power in a class of unstudied and unfinished eloquence, which by its fervor eclipsed the finish and grace and force of even a Demosthenes; a class of speaking in which Longinus regards "Saul of Tarsus" the greatest known master.[2]

It is a perversion of this source of pleasure and of power when the means is made but an end, and the mere ecstasy of nervous excitement is sought for its own sake or for any inferior end. There can be no question that after the peculiar manner of the Old Testament teaching the case of Noah the first great "preacher of righteousness," like other men subject to this excitement and seeking it merely for its own sake by artificial stimulants, is set forth as a warning example.[3] It is to the same purport that the two elder sons of Aaron,

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[1] 2 Cor. v. 13; Acts xxvi. 24.

[2] Fragment of a lost work preserved in a manuscript copy of Paul's Epistles now in the Vatican Library at Rome.

[3] Gen. ix. 21.

offering incense under an irreverent excitement are struck dead in their delirium; and that immediately thereupon the father and the two surviving sons are charged, "Do not drink wine nor strong drink when ye go into the tabernacle of the congregation, that ye may teach the children of Israel."[1] It is yet more to the same effect that such men as the Nazarites, Elijah, John the Baptist, and other great preachers abstained entirely from artificial stimulants, having in themselves a native "spirit and power" as an inward self-stimulus; while the select model of a Christian pastor is so abstemious that he needs an apostle's express direction ere he can be persuaded to use a stimulant even as a medicinal restorative.[2]

It is an excess of the same worthy stimulus when the genuine equable excitement flowing from the fervor awakened by a great theme degenerates into a mere *rant*, the offspring of a forced, strained and unnerving excitement. It is this fault and perversion of an excellence that is so often charged upon American speakers by those accustomed to the smooth and measured flow of utterance which gives character to the speaking heard in the British Parliament. It is this which so intelligent and devout a Christian writer as the Count de Gasparin of Paris has found to censure in the religious speakers of America; particularly in one of the most fervent of its Christian denominations. The lowest of all the abuses of this source of healthful and useful delight is the sporting with its sickly development practiced in the wearing, and finally deranging self-excitement that is witnessed in the phenomena called clairvoyance, spirit-rappings, and the like; which at the best are but careless experimenting with the most delicate of all the parts of our organism, made to be in its healthful excitement the source of a genial and ennobling delight.[3]

The abuse, however, too frequent doubtless, is no argument against the proper use of any power for good or of any source of pleasure which our Creator has implanted within us. The ecstasy of nervous stimulus as felt by an orator like Demosthenes declaiming on the sea shore, thrilled by the tones of his own voice if the dashing waves, his only auditory, were not, or by a poet like Schiller writing all night when the inspiration was on him with a wet towel about his head to cool his fevered brain, and even by a mathematician like

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[1] Lev. x. 9, 11.

[2] Num. vi. 3; Judg. xiii. 7; Jer. xxxv. 6; Luke i. 15; 1 Tim. v. 23.

[3] See "Spiritualism Tested;" by the Author of this treatise.

Sir Isaac Newton toiling for weeks to reach his result, and, when so near as to be sure of its nature completely unmanned by nervous excitement and obliged to transfer his work for completion to another hand, this is a source of superior pleasure which always has controlled and always will sway the truest genius.

The artist above all men needs this delight so inexpressibly fascinating to cheer, to prompt, to sustain him in his long years of unrequited toil; years most drear were it not for this constant and exquisite delight. If Coleridge had occasion to say "Poetry has been to me its own exceeding great reward," much more may the sculptor or painter utter it of his art. More than this, the artist must be able to infuse this same, his own fervor of spirit, into the beholder; otherwise he carves and paints in vain. As the speaker in prose or verse that carries away his audience with him has learned the almost magnetic power of an imparted nervous stimulus, so the artist who succeeds, must learn to possess it at his work: since it will then be readily imparted to those who come within the sphere of his influence as beholders of his work.

CHAPTER III.

THE IMPRESSIONS OF THE HIGHER SENSE OF HEARING AS ADDRESSED BY ART.

Though the range of the arts which address the ear is far more limited than that of those addressing the eye, yet its superior relation to language as the means of communicating thought gives to the principles of these arts a most important place in the sphere of *Rhetorical* Criticism. For two manifest reasons, however, the considerations of sound as producing the impressions of Art, which mainly relate to the analysis of the laws of musical sounds and the history of their combinations and applications in Music, may be made to occupy a brief space in a general treatise on Art criticism. The broader field of the relation of agreeable sounds as heard in intelligible language, in poetry and prose, in the epic and the drama as rehearsed through the histrionic art, and in reading and oratory as uttered by the ordinary public speaker, belong to the department of Rhetoric and Poetics, of Elocution and Oratory; and from the days

of Aristotle these have been abundantly treated. The special field of Music and Musical sounds, like that of the other Fine Arts proper as Painting and Sculpture, has been mainly the subject of professional teaching; partly from the fact that its teachers instruct by the voice instead of the pen, and address only practical pupils who do not need written treatises; partly also from the necessary technicality of all professional study which makes its text books unsuited to the general student. A cursory view of this field of Art proper is all that is essential for the general student.

SECT. 1. MELODY; THE NATURE OF SOUNDS CALLED MUSICAL, AND THE MODES IN WHICH BY THE VOICE AND BY INSTRUMENTS THEY ARE PRODUCED.

Sound, as the ancients before Aristotle[1] understood, is caused by vibrations in the air; the jar produced by a blow on a wall causing the wall to vibrate, which vibrations are communicated to the air and through the air to the ear; the human voice, producing vibrations in the air, first within and then without the lungs, which in a similar manner are transmitted to the ear. Sounds called musical are caused by vibrations of the air so rapid and regular that they produce a continued and agreeable impression on the ear. This truth as to sounds in general was taught by Kanada, the Indian philosopher, while the Greeks were yet a rude people; and its relation to musical sounds was fully developed first by Pythagoras, and afterwards more fully by Aristotle among that people who led the world to Science in this, as in other arts.

Both the general nature and the special distinctions of musical sounds are easily illustrated. A wheel made to revolve with increasing rapidity comes at a certain velocity to give forth a low musical tone; which tone takes a higher pitch as the speed increases. A cord gradually tightened and made to vibrate, gives forth the same changing notes; for it is not the material, but the vibrations of the air caused by its concussions which produce the musical notes. All musical tones are characterized by a clear and smooth ring when prolonged: and as distinguished from each other they are classified first, according to length, as long and short; second, according to pitch, as high and low; and third, according to force, as loud and soft.

The human voice is the natural first instrument for producing musical sounds. A child very soon catches the idea of their nature;

[1] See Book I. c. 1, § 4.

and instinctively gives his vocal organs the conformation to make them. The seven distinct notes of the scale, called "natural" because all nations in all ages fall into it, are produced by a natural and easy change of the position of the parts of the throat and mouth; the higher notes requiring compression, and the lower relaxation of the larynx; both the increased size and length of the vocal organs in mature life making the natural notes deeper than in the child's voice. To produce the next succeeding seven higher notes, or the octaves in the scale, the air passage is narrowed and the breath is forced through it with greater velocity.

The transition from the voice to *wind* instruments was simple and natural. At first, seven pipes of the same size, but of different lengths, corresponding in this to the changes of the vocal organs by which the successive notes were formed, were bound together, side by side, so that the lips could pass readily from one to the other; the form of musical instruments earliest represented on the monuments of ancient Egypt; and also the simplest used now by the rudest inhabitants of earth, the Sandwich Islanders. After this simplest invention, and apparently as a natural suggestion from its principle, a single reed or pipe with holes cut at the proportionate lengths was found to give the same alternation of seven notes; while a double force of voice was seen to produce the octaves. The next transition seems to have been to *beaten* instruments. It was observed that elastic substances, such as a hide drawn over a hoop, or a circular plate of metal gave forth according to the size of the surface a high or low note corresponding to those of the pipes; and instruments of percussion, or beaten instruments, like the drum and cymbal, thus became an added means of producing musical sounds. Next again, to this class *stringed* instruments came to be added; a readily vibrating cord when tightly stretched being perceived to give the same smooth, clear ringing sounds produced by the pipe and drum; while, too, by a variation of the cord, as of the pipe, in length, size, and tension, the same succession of sounds pleasant to the ear were produced.

In every age, and among people of every stage of civilization, in addition to simple strains performed by the voice, the three kinds of musical instruments, already mentioned, have been found; indicating that they originated in a principle "in the nature of things" instinctively suggested to man; upon which, in no stage of advancement, can he make any material advance. In the history of the Seventh generation descended through Cain from the first man we read of Jubal,

that "he was the father of all such as handle the harp and organ;"[1] in which mention advanced forms of stringed and wind instruments, though doubtless in the germ of their development, are seen to be in use. In the very earliest days of the patriarchal era, we read of men prospered with fortune that "they take the timbrel and harp and rejoice at the sound of the organ;"[2] the three classes of instruments being thus introduced together. In the representations on the monuments of Egypt, numerous varieties of each of these classes are found; the fife, flute, trumpet, etc., of the first class; harps and viols of varied forms of the second class; and the sistrum, tambourine, cymbal and drum of the third class; a variety and a classification which is illustrated among the kindred people of Assyria by the mention in the sacred narrative of "the cornet, flute, harp, sackbut, psaltery, dulcimer, and all kinds of music."[3] In the polished ages of Greece, and indeed among all the improvements of modern mechanical skill, nothing essentially new in musical instruments has been discovered; and all added inventions in such instruments have been but variations of the methods of producing musical sounds from the vibrations, first of *air* in pipes, second of *cords* having chiefly length, and third of *plates* having extent in two dimensions, lateral as well as longitudinal.

The word *melody*, originating in the ancient Greek language in very early times, expressed the general effect of musical sounds on the ear. In its restricted signification, as a technical term of Art, it refers to an arrangement of a single musical strain for a single voice or instrument. It is appropriately applied, therefore, when only one part in a musical composition is performed; either the treble, tenor, or bass, though many voices join, sounding together in each part of the strain the same notes. All musical performances, of children and rude tribes, naturally take this character; and the earlier and simplest popular songs, seldom committed to a written form, are pure melodies, having only one strain in which all classes of voices join.

SECT. 2. SYMPHONY; THE CONSONANCE OF MUSICAL SOUNDS, THE LAWS OF ACCORD DEVELOPED BY PYTHAGORAS, AND THE CONCERT OF DIFFERING VOICES IN PRODUCING ACCORDANT TONES.

As in all the arts, so in Music, mere practice in execution preceded scientific study of theory. Even in its advanced stages the ablest performer may learn music as an *art;* unaware of the science that as

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[1] Genesis iv. 21. [2] Job xxi. 12. [3] Daniel iii. 10.

a foundation must underlie all art. In very early times however the ablest minds began to investigate the philosophic principles of this everywhere admired art, music, as executed by the voice or instrument, and as learned by rote or by note.

In the early ages of Egypt and of Greece there was apparently no scientific analysis of the principles on which musical notes are in accord or discord when sounded together; and hence there was no knowledge of the proportionate length and rapidity of aërial vibrations considered as their producing cause. Ovid says of the "Golden Ages"[1] that there were then no distinctive principles for the construction of the "straight trumpet and of the curved horn" made "from brass." Pythagoras, however, after having studied music as an Art in Egypt, became possessed with the conviction that the deepest principles of science, worthy the profoundest study of the philosopher, were to be sought as the basis of its laws; and, while he introduced music into his school at Crotona, in Eastern Italy, as an art eminently calculated to refine, he set himself to the effort to reach the laws of nature on which its subduing and moulding power were to be explained.

The union of Music and the Mathematics in the school of Pythagoras, his occult theory of the Music of the Spheres, his more mysterious doctrine of numbers as the controlling law in all philosophy, which with him embraced both science and art, were not arbitrary and enigmatical. These were rather expressive exponents of the system which his comprehensive intellect had devised. Pythagoras first perfected the musical scale, and taught the law of its transposition; and he is said to have been led to the true idea by this incident. Going into a smith's shop one day, when thinking of the application of his theory of numbers to sounds, he noticed that as several smiths were striking the same piece of iron with hammers of different sizes, all the sounds were harmonious except one; and on careful observation he remarked that the harmonious or accordant sounds produced by the ring of the same piece of iron on the anvil were the first, third and fifth of the octave; while the discordant ring was between two of these tones. Reflecting upon the cause of this difference he could refer it to nothing but the different sizes or weights of the hammers. He, therefore, carefully weighed the hammers; and, on returning home, he suspended by cords of the same length and size pieces of iron having the same proportionate weights

[1] Ovid. Metaph. I. 98.

as the hammers of the smiths. On striking the cords thus tightened by these weights, he observed that they gave forth the notes corresponding to the ring of the iron. The discovery led him to the *cause* of the distinctions made in musical sounds, as produced primarily by the voice, and secondarily by musical instruments; and thence his great mind proceeded to the application of the law of proportions in the size of strings and pipes, which enabled the Greeks to improve musical instruments to an indefinite extent.

In order to appreciate the scientific principles to which Pythagoras was now led, it is necessary first to glance at the practical analysis of musical sounds already reached by the Greeks and introduced into their compositions. The law of proportion in sounds, pleasant to the ear, may be simply stated. The vibrations of a tight cord when struck produce corresponding vibrations in the air around. The quick vibrations produce an acute sound or high note; the slow vibrations a grave sound or low note. The quickness of vibrations in cords depends upon these three circumstances; the length of the cord, its size or weight, and its tension, or the force with which it is stretched. The number of vibrations in a stretched cord, in a given period, as a second of time, is inversely as the length of the cord, inversely as the square root of its weight, and directly as the square root of its tension. Hence in a guitar, harp or violin, one-half the length of any string vibrates twice while the whole vibrates once; in two strings of the same length, one must be one-fourth the weight of the other in order to vibrate twice as rapidly; and the same string must have four pounds of tension put upon it in order to vibrate twice as quick as when stretched by the tension of one pound.[1] When the ratio of vibrations in two cords varying in length, size, or tension is as two to one in number, the note produced by the shorter, the smaller or the more tightened cord will be an octave above the note produced by the other. A correspondent proportion will exist between the number of vibrations, when the differences of length, size and tension are in any other ratio than that of one to two; as in that of two to three, of three to four, etc. The same principle is applicable to wind instruments.

[1] The mathematical formulæ obtained by combining all these three elements are $T = L\frac{\sqrt{w}}{\sqrt{gt}}$, and $N = \frac{\sqrt{gt}}{\sqrt{w}}$, in which T = time of one vibration; L = length of cord in inches; W = weight of one inch; t = tension in pounds; g = force of gravity in a falling body; which is 386 inches in a second of time; N = number of vibrations in a second of time.

When two cords vibrate with the same rapidity, the waves of air vibrating with them, strike together on the ear producing what is called "unison;" which the Greeks styled "homophony," or the same voice. When again the proportion between the vibrations are as one to two, two to three, etc., or any number such that whenever the slower vibrations do occur they chime in with, instead of acting against, the quicker vibrations in striking the ear, an effect is produced pleasant to the auditory nerves which the Greeks called "symphony;"[1] but which in modern times has taken the name "accord" or "chord," derived, also, from the Greek "*chordos.*" Vibrations of other proportionate numbers cause waves in the air which clash with each other, and thus produce the unpleasant impression called "discord." It should be observed that while these two words symphony and chord were distinct in early Greek usage, they came afterwards to be used as synonymous; while now symphony is a name applied to an elaborate musical composition.

An important fact here to be noticed is that the divisions of the cord into two, three, four, and other equal parts producing the octave and kindred chords are natural not arbitrary; *self-divided*, not the craft of man. Thus, if a long tightly stretched cord be placed in the crack of a window so as to be struck and caused to vibrate by the draft of air entering, it will be observed that soon according to the strength of the air-current and its manner of acting on the cord, it is vibrating in two equal parts, each half giving forth the octave above the note first heard. Soon, too, as the wind strengthens, it is again vibrating in three separate parts each giving the fifth of the second octave; then that it divides itself successively into four, five and six equal parts, giving successively the eighth of the second octave, the third of the third octave, and the fifth of the third octave; when leaping over the division into seven parts which would be a discord with the note preceding, the cord divides itself into eight equal parts, and gives forth the eighth of the third octave.

The same principle of vibrations in air is observed in the nodes into which vibrating solids and liquids are seen to break. If a strong cord several feet in length be fastened at one end, while the other, held by the hand, is made to vibrate up and down, at first slowly, then more rapidly, its capacity to vibrate as a whole will be soon

[1] Both the nouns *homophonia* and *symphonia* and their adjectives are used by Plato, Aristotle and Plutarch. Aristotle illustrates their difference in his Problems xix. 16, 39.

reached; when its oscillations will break first into two, then into three, then into more equal nodes. So if a pebble be thrown into a smooth lake, the first circling ripple necessarily creates by its oscillation a second, and that a third, of the same size as the first, be that larger or smaller.

It is interesting now to observe that the main principles, practically considered, in the science and art of Music as now understood, were recognized by early Grecian philosophers and artists; to such an extent, in fact, that we now have to confess of the English language as did the Roman Vitruvius of the Latin tongue, that the very terms we use in musical science are borrowed from the mother-tongue of the arts. In fact, it is nearer to the truth to say that we speak in Greek, using their words, when any art is our subject of contemplation. The word tone is Grecian, from "*teino*," to stretch; and its etymology points to the tension of the cord as the means of producing the distinctions of musical sounds called tones. The division of the natural musical scale into two parts called "tetrachords," refers to the fact that the Greeks constructed their first rude lyres with four "chords," or strings, so adjusted as to size, length, or tension, that when struck successively their tones were those of the human voice in rising through the first half of the natural scale; which result they found to be secured by making a difference of what they called a whole tone, or stretch, between the first and second and the second and third cords, while between the third and the fourth cords half a tone or stretch gave the sound next struck naturally by the voice. They then reached the idea that three sounds are in accord when the second is two tones above the first, and the third is one and a half tones above the second; and that these in conjunction with the sound of the octave, or the eighth cord, the highest in the second tetrachord, produce the natural first perfect symphony; these vibrations striking in so as to harmonize with each other.

This practical science, already attained by the Greeks, Pythagoras with the hint he had received proceeded to examine by experiment; applying the rigid rules of mathematical calculation in his investigation. The result of his experiments led to a system of proportions in cords giving out musical tones, most admirable in its ingenuity. Taking two strings of equal size, length and tension, the Greek divided one by a rest in the middle into two parts; when sounding the whole of the undivided cord and the half of the divided one together, the note now called the octave was obtained; which they called "*diapason*," because it was necessary to go through all the

notes of the scale to reach it. Again removing the rest so as to cut off one-third and sounding the two-thirds of the divided, together with the whole of the undivided cord, they obtained the fifth note, and secured the chord which they styled "*diapente*," because it was necessary to go through five notes to reach it. Yet again placing the rest so as to cut off one-fourth of the string, and sounding together the whole and the three-fourths, they obtained the fourth note, and the chord which they named "*diatesseron*," because it was necessary to go through four notes to reach it. Here, for the first time, dividing the vibrating cords successively by the numbers two, three, and four, two notes following each other in the order of the natural voice were found to be one tone apart. Here, too, by striking the portions of the string, two-thirds and three-fourths, at the same time the first discord was encountered.

Regarding now the proportion in the length of cords employed and the number of vibrations produced in a given time, it was observed that the first was as one to two, or a double ratio; the second as two to three, or a sesquialteral ratio; the third as three to four, or a sesquitertian ratio; while the latter, the ratio of three-fourths to two-thirds, which produced the alternation of a natural tone and the discord, was as eight to nine, or a sesquioctave ratio. This latter difference in sound between these two discordant notes was called a "tone;" and the ratio of the length of strings, the sesquioctave, which gave this first distinction of tone, they made the proportion for the division of the others among the seven tones not yet fixed; namely, the second and third, the sixth and seventh. Beginning then with the whole string they separated off one-ninth of the whole by a rest, so that the proportion between the whole and the larger portion cut off was as nine to eight; and this gave the first whole tone, and the second note in the scale. The first note now called *do*, the Greek named "*hypate*," or the *low;* and the second, now called *re* they named "*parhypate*," *next to the low.* Taking then again the remaining eight-ninths of the string as a whole and dividing off one-ninth of it, so that this second remainder should be to the first remainder in the proportion of eight to nine, they obtained the second whole tone, and the third whole note, now called *mi*, but named by the Greek, "*luchnos*," the *light* or *guide.* Arrived now at this third note the distance to the point already fixed of three-fourths of the string as giving the fourth note, was so short as to make the ratio between the lengths giving the third and fourth

notes only as about fifteen to sixteen,[1] or about one-half of the ratio proposed as the measure of a whole tone. This half tone was called by the Greeks, "*dyesis,*" or *division;* and the fourth note preceding this division, was called "*mese,*" or the *middle* note of the scale; while the fifth note, *sol,* following the division was called "*paramese,*" or *next to the middle.* Finally dividing the remainder of the half string, or the distance between the two-thirds rest and the half rest, eight-ninths of the two-thirds gave another whole tone and the note *la,* called by the Greeks, "*trite,*" or *third* from the highest. Yet again eight-ninths of that remainder of the string gave another whole tone and the note *si,* called "*paranete,*" or *next to the highest,* by the Greeks. The very short, yet remaining, portion of the string intervening between the last mentioned point and the one-half which gave the octave, called "*nete,*" by the Greek, was only a half ratio, about fifteen to sixteen, and this gave a second half tone in the scale. The special reason of Pythagoras for the names given to the highest and lowest and to the intervening notes of the scale will be noticed in the next chapter.

Though the scientific principles of the natural scale thus wrought out by Pythagoras, were unknown in earlier, as they are almost forgotten in modern times, the scale itself was known before the Greeks were civilized. The modern Indian musicians designate the seven notes by the Sanscrit words *sa, ri, ga, ma, pa, dha, ni;* their origin showing their antiquity. Probably the Indian, certainly the Greek musicians, as old Greek manuscripts preserved indicate, had a system of characters in which music was committed to written forms; not unlike the modern method of musical notation. In later ages the musical scale has been written on what is called the *staff,* consisting of five parallel lines with four intervening *spaces;* the first or lowest note of the simple or natural scale being placed in the treble staff on the line below the staff, and in the bass staff on the second space from the bottom. The modern names given to the notes of the octave are attributed to Guido, a monk of Arezzo, in Italy, an eminent musician, who lived about A. D. 1022. Guido derived the first six from the Latin hymn to St. John the Baptist—

"*Ut* queant laxis *Famuli* tŭorum,
Resonare fibris, *Solve* polluti
Mira gestorum, *Labii* reatum."

[1] The ratio was between $\frac{8}{9}$ of $\frac{8}{9}$ of the string which gave *mi* and $\frac{3}{4}$ of the string which gave *fa.* The fractions reduced are $\frac{256}{324}$ and $\frac{243}{324}$; or about as 15 to 16.

The seventh syllable *si* was afterwards added by Le Maire, a French musician. In modern times, for convenience' sake, arising from the use of abbreviations, the notes of the scale have been indicated by the first seven letters of the alphabet; the enumeration beginning in the natural scale already considered, for a reason to be observed in the next section, with C; extending thence to G, then returning to A, and ending with B.

Thus far the *longer* portion of the divided string has been alone regarded: but now the shorter portions and the notes produced by them are to be noticed. We have seen that there are three accords or consonances in the octave; that between the first and fifth, that between the first and fourth, and that again between the first and eighth; which the Greeks called respectively "diapente," "diatesseron," and "diapason;" and which, because found in the natural scale, were called simple chords. If now the shorter portion of the divided cord, the one-third, be vibrated, it is found to give the fifth of the second octave; and this, in concert with the sound of the whole cord, formed what the Greeks called "diapason-diapente," now called the twelfth; which is one of the sweetest of all chords, its ratio being a triple one. Yet again, if the fourth of the entire cord be sounded, the octave of the second scale is obtained, called by the Greeks "bis-diapason," and now named the fifteenth or double octave; which is also a pleasant chord, the ratio of its vibrations to those of the whole string being as one to four, or a quadruple ratio. These five, three simple and two composite, were the principal chords as developed by the Greeks. They covered, of course, but two octaves.

Modern improvements have introduced three or four octaves into the range of musical instruments. The proportion of strings which will produce these several successive scales of notes are as follows:

1st Octave. $1 — \frac{8}{9} — \frac{4}{5} — \frac{3}{4} — \frac{2}{3} — \frac{3}{5} — \frac{8}{15} — \frac{1}{2}$
2d Octave. $\frac{1}{2} — \frac{4}{9} — \frac{2}{5} — \frac{3}{8} — \frac{1}{3} — \frac{3}{10} — \frac{4}{15} — \frac{1}{4}$
3d Octave. $\frac{1}{4} — \frac{2}{9} — \frac{1}{5} — \frac{8}{16} — \frac{1}{6} — \frac{3}{20} — \frac{2}{15} — \frac{1}{8}$
4th Octave. $\frac{1}{8} — \frac{1}{9} — \frac{1}{10} — \frac{3}{32} — \frac{1}{12} — \frac{8}{40} — \frac{1}{15} — \frac{1}{16}$

In each successive octave the proportionate lengths of cord giving the several notes are one-half the lengths giving the corresponding notes in the previous octave; and this is obtained, when the numerators are even numbers, by dividing them by two, and when the numerators are odd numbers, by multiplying the denominator by two.

Since, now, the number of vibrations in cords in a given time is inversely as their lengths, the number of vibrations in each of the

proportionate lengths, indicated by the fractions above given, will be indicated by the same fractions inverted. Thus, the proportionate number of vibrations in a given time of cords producing the first two octaves will be as follows:

1*st Octave.* $1 - \frac{9}{8} - \frac{5}{4} - \frac{4}{3} - \frac{3}{2} - \frac{5}{3} - \frac{15}{8} - 2$
2*d Octave.* $2 - \frac{9}{4} - \frac{5}{2} - \frac{8}{3} - 3 - \frac{10}{3} - \frac{15}{4} - 4$

If these fractions be reduced to their common denominator, which is 24, they will then be to each other as their numerators; or as

1*st Octave.* 24 : 27 : 30 : 32 : 36 : 40 : 45 : 48
2*d Octave.* 48 : 56 : 60 : 64 : 72 : 80 : 90 : 96.

In each octave there are three sets of proportions. The ratios between the 1st and 2d, 4th and 5th, 6th and 7th, namely, 24 to 27, and 32 to 36, and 40 to 45, are as 8 to 9. The ratios between the 2d and 3d, and the 5th and 6th, namely, 27 to 30, and 36 to 40, are as 9 to 10. The ratios between the 3d and 4th, and the 7th and 8th, namely, 30 to 32, and 45 to 48, are as 15 to 16. It should be carefully observed, therefore, that of the five intervals called whole tones in the scale, three are of a larger ratio than the other two; while the intervals called half tones are not precisely the halves of those marking the whole tones.

From the relations of the intervals which produce chords a system of proportions and progressions called "harmonical" has been deduced, which are noticed by some algebraists.[1] Thus the intervals producing the four chords in the first octave, that is, those producing the first, third, fifth and eighth are in this proportion; "the first is to the fourth as the difference between the first and second is to the difference between the third and fourth," or 24 : 48 :: 30—24 : 48—36; i. e. 1 : 2 :: 6 : 12. Again the intervals between the 1st and 5th of the first octave, and the 5th of the second octave, are in the following proportion; "the first is to the third as the difference between the first and second is to the difference between the second and third;" or 24 : 72 :: 36—24 : 72—36; i. e. 1 : 3 :: 12 : 36. These proportions coming within the two octaves which limit the ordinary range of the human voice are called "Harmonical Proportions." Yet again, the numbers representing the proportionate vibrations of the cords marked in the scale of four octaves as 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, etc., inverted, reduced to a common denominator, and their numerators

[1] See Loomis' Algebra, Sects. xiii. and xiv.

put in proportion would give this progression in each successive three terms; "the first is to the third as the difference of the first and second is to the difference of the second and third." Thus, the fractions mentioned, inverted and reduced, have, as their numerators, 60, 30, 20, 15, 12, 10; in which the progression mentioned is seen in the several ratios; 60 : 20 : : 60—30 : 30—20; also 30 : 15 : : 30—20 : 20—15; also 20 : 12 : : 20—15 : 15—12; also 15 : 10 : : 15—12 : 12—10. As the lengths of string mentioned produce the first, the octave, the twelfth, the double octave, the seventeenth, the nineteenth, etc., all of which are chords and in harmony, the progression here stated is called "Harmonical Progression."

The consideration of symphony leads on, as indicated by the point last considered, to harmony. The Greek word "symphony" refers immediately to the consonance of associated voices of different tone singing the same melody. Even savages, however, distinguish the changing tones of voice in growing youth, and the different pitch of the mature male and female voices; and in their simple melodies the male voice at its change sings the same common strain a fifth below. Besides this first variation yet a third, a fifth below the ordinary male voice, is heard from men of deeper toned voices; a fact noticed among the native tribes of Africa, and also among the negroes of the American continent in their sacred songs. The very earliest stage of improvement causes these naturally differing parallelisms of the same strain, to vary more and more; and the study of symphonies, or accords, leads at length to the independent strains which make up the different parts in the music of an orchestra. First, male voices, which seem to differ most from each other, are trained according to their pitch to sing strains of different pitch and cadence, yet in accord with each other and with the original principal strain. Finally, in the last stage of advancement a distinction is observed in female voices; the voice of most women being found to be much shriller than that of some females and of boys of half growth. The Brahmins of India have now, and from time immemorial, even before the Greeks were a cultured people, have had three parts, or parallel strains in their music. The fact that Pythagoras studied music in India justifies the supposition that these three parts were anciently, as they are now, the three specially mentioned by Plato in his Republic. In a beautiful figure picturing the triple virtues that a good magistrate should possess in union, Plato says, "he should attune them like the three musical chords, bass, tenor and treble." The common four-fold division of parts is indicated by the

three terms derived from the Latin; namely, "bass" or the low part, "tenor" or the medium pitch, and "treble" that is the triple, third, or high part. Modern refinement has introduced a sub-division of each of these; adding for the range of female voices a part called by the Italian word "soprano" or high, to which is sometimes added a "mezzo-soprano" or midhigh; for the range of medium male voice "alto" a high tenor; and for the range of lower male voices the barytone, or deep-toned, from the Greek *barytonos*, which is a higher bass. In the practical business of teaching music it is found that while the voice may sound with ease notes both higher and lower, the range of tones to be specially cultured by those singing different parts is as follows; for the soprano or treble from B below to A above the staff; for the alto or second treble from G below to B or C; for the tenor from E to G; for the bass from F below to D above; and for the barytone from F below to F above. In early life the voices of both boys and girls are alike naturally adapted to the treble; after the change occurring at maturity, some girls' voices, and during this change most boys' voices, are fitted for the alto; while men's voices at maturity are suited some to the tenor, some to the barytone, and some to the bass.

SECT. 3. HARMONY; THE THREE SCALES OF MUSICAL TONES ON WHICH IT IS FOUNDED; THE DELICATE SHADES OF TONE AND THE TEMPERING OF MUSICAL INSTRUMENTS BY WHICH ITS HIGHEST EFFECTS ARE SECURED.

Thus far we have considered the succession of musical notes appropriately called the "natural scale;" since it is the order of musical tones which men by nature, without any of the arts of culture, have in all ages employed. In this scale, as we have observed, the half tones occur between the third and fourth and between the seventh and eighth notes of the octave. This scale was called the diatonic by the Greeks because the voice or instrument passes in rising through it, over all the natural divisions of tones.

As, however, the voice or instrument at the two points mentioned divides a tone and finds the intermediate half tone to be a musical note, the question was a natural one whether divisions might not be introduced between the whole tones; so that each should have a half tone in pitch above or below itself interposed between it and the next succeeding note. If, for instance, the rest before fixed at given distances, as a half, third, fourth, eighth and ninth, were made to slide gradually along, shortening the cord from the whole to the half length, the cord, vibrating meanwhile, would give forth an

unbroken succession of varied tones, ringing or musical in their nature, divided not simply into halves or quarters, but into infinitesimally small differences of pitch. If now, any of these intervals could be so divided that the voice would pass from one to the other with ease, and give forth as in the natural or diatonic scale a succession of notes agreeable in themselves, readily struck one after another, by the voice, and having their intervals regularly proportioned so as to secure accords at given distances, a range of pleasant sounds greatly multiplied could be secured; and that too, within the compass of the human voice which ranges over only about two octaves. It is an interesting illustration of the character of the Asiatic race as respects progress in art, that while the Chinese have had, even centuries before Christ, not only the natural scale, but a division of it into twelve half tones, yet they have never so applied this knowledge as to secure the higher effects of music. On the other hand, the superior Brahminic race in India reached a worthy advance in musical culture, which they have retained to this day; while, moreover, the Persian musicians, of the same superior stock with the Brahmins, now go into China as masters in higher musical performances. The perfection of this system of division in musical tones attained by the Greeks, realized what they designated by the word "Harmony."

The first effort naturally was to multiply in half tones; two of which had already been found so agreeable in the natural scale. A succession of such half tones interposed between the five notes of the scale which were separated by a whole tone, made twelve instead of seven different notes to the octave, thus giving greater variety in the same compass. According as these half tones were reckoned to be above the note below, or below the note above, they were called "sharp," or "flat;" a slight sharpening or contracting of the vocal organs when sounding any one note readily giving a note half a tone higher in pitch, and a slight flattening or relaxing of the muscles controlling the voice, giving a note half a tone lower than the one just sounded. Arranging these new notes between the notes of the natural scale, a new scale was formed; which, because of the overlapping of its tones like colors in painting, or from its producing a variegated and adorned style of music, the Greeks called the "Chromatic Scale," from "*chroma*," color.

In constructing the scale of sharps and flats, the fixed law of the movement of the human voice in tones and half tones becomes more apparent. Taking three octaves of the natural scale, one above the

other, below that of the ordinary pitch, the new or chromatic scale is constructed by what is called "transposition of the scale." Commencing with G, the fifth note in the diatonic scale, and making it the first note of a new scale, there are found from G to C two whole tones and a half tone; giving the same succession as from C to F. Proceeding, however, to make out the remainder of the new scale, which requires three tones and a half tone, we find a half tone from E to F, where the new scale demands a whole tone; and hence F must be raised in pitch a half tone; which is indicated by the mark called a sharp. This is the first transposition by sharps; and by it one division of a whole tone, and one new note, is secured. Commencing again with the fifth of this second scale, or D, as the first note of a third scale we find between D, F sharp and G, the two tones and a half tone required in the third scale; but, to obtain three whole tones succeeding, C must be made sharp. This is the second transposition by sharps; which secures a second division and one more note. Beginning again with the fifth of this new scale, or A, and proceeding in the same manner, we find that G, in addition to F and C, must be sharpened; and this, again, is the third transposition by sharps. Beginning again with the fifth of this last scale, or E, we find that D must be sharpened; giving the fourth transposition by sharps. This process may be continued till all the possible divisions of tones realized in the "Enharmonic Scale" are exhausted.

We have already observed that the Greeks, by experiment, found the first separate whole tone between the fifth of the scale, produced by two-thirds of the length of the cord, and the fourth of the scale, produced by three-fourths of the same length. In transposition by sharps we have begun with the fifth of the natural scale, the first of the two points mentioned. Taking now the second instead of the first of the notes by which the Greeks fixed the interval of a tone, namely, the fourth of the scale, and constructing another set of scales, we have the transposition by flats. Commencing with C of the natural scale, and making the fourth note, or F, the first of a new scale, since three whole tones follow F in the natural scale, while the new scale requires two whole and a half tone, the fourth in order from F, or B, must be flattened so as to introduce into the new scale a half tone where there was a whole tone in the natural scale. This gives the scale of one flat. Beginning again with the fourth of this new scale, or B, already flattened, E becomes the fourth, and must also be flattened; and this gives the scale of two flats. Beginning with E, flattened, A becomes the fourth of a third

scale; in which there are three flats. Beginning yet once more with A, flattened, D becomes the fourth of yet another scale, or that of four flats. These transpositions can be carried no farther; since, if we begin with D flat, G flat would be the fourth, and D flat the octave of the new scale; a process which finally exhausts itself, as in the scale of sharps.

Having arrived at the construction of this, the "Chromatic Scale" of the Greeks, and that by a nicety of analysis, such as we, who have received without cost the practical result of their labors, can hardly appreciate, the Greek philosopher went farther and wrought out the more intricate "Enharmonic Scale;" which is, as the derivation of its Greek name indicates, a measure *in harmony with, fitted into,* the other scales. The practical application of its principles belongs to the highest order of musical composition; though the principle of its construction may be briefly and clearly stated. As we have seen, the intervals fixed as whole tones are not uniform; the ratio of some being 8:9 and of others 9:10; while, though the semitones of the natural scale are of the same ratio 15:16, those of the semitones brought in by transposition of the scale between whole tones having the differing ratios of 8:9 and of 9:10 must produce semitones of different ratios. Taking all these varied intervals and dividing them by a common measure small enough to be a common divisor, and calling these minute equal subdivisions, as the Greeks did "*commas,*" that is, segments or slides, it is found that nine of them are the measure of the larger intervals and eight of the smaller intervals forming whole tones; while the measure of the diatonic or natural half tone was five commas, and that of the chromatic semitone either three or four commas. In the enharmonic scale two chromatic half-tones and a quarter of a half-tone, sometimes called a "vibration," were made the interval given to a tone. In making use of the enharmonic scale in music, not only the voice, which has a limited compass, but musical instruments covering an extended range of tones are employed. The human voice readily attains the transitions of tone which give the sweet symphonies or chords, and the delicate alternations and successions of notes belonging to harmony. In the construction of instruments, particularly of keyed instruments, as the piano and organ, the securing of the minute divisions of tones required in the enharmonic scale is attended with difficulty. While the ordinary compass of a single human voice is but two octaves, and the entire range of any number of voices of different natural pitch is not more than four or five octaves, to the compass of musical instru-

ments there is scarcely any assignable limit. Though musical instruments have in all lands and ages been of the same three classes, wind, stringed and beaten instruments, yet the variety in form and size of each has afforded a great range of tone. Among the Hebrews, and their neighbors the Egyptians and the Assyrians, the varieties of each of these classes now observed in sculptures on their monuments is surprising to the student of art; and as all must have been constructed to be used in concert, and as musical compositions must have been framed so as to take in their varied range of tones, the conception we are forced to form of the knowledge of musical combinations attained in these primitive nations assumes a vastness like to that of their works of art in Sculpture or Architecture. In the Hebrew of the Old Testament the names of no less than seven different wind instruments, of eight stringed instruments and of four beaten instruments are given; while upon the walls of the tombs of Egypt the varieties of each of the classes represented are almost numberless. The Greeks apparently had a less variety of instruments; yet the allusions of Plato and Aristotle to the stringed instruments that existed in their day indicate that these instruments were constructed so as to form together one grand whole when brought into concert. Modern skill in mechanical applications has converted the harp, the chief representative of stringed instruments, into the *piano*, whose strings are struck with pedals instead of by the fingers. It has embodied in the organ every variety of tone belonging to wind instruments, and has put under the magic power of one performer no less than eight octaves; a compass not only covering all instruments formerly invented, and now used in concert, but overlapping the range of them all by about an octave below and by more than an octave above. At the same time the range of ancient wind, stringed and beaten instruments has probably been increased rather than diminished. Among the noblest triumphs of art nothing can be grander than the performance of one of the great oratorios of the ablest German composers, when to a full choir and orchestra is united the deep swell, the sublime roll and the flashing and dancing chiaroscuro that pours from the hundred mouths of such an organ as that in the immense Music Hall at Boston, Mass., those of Haarlem and the Cathedral of Ulm in Germany, and that in the Town Hall of Birmingham, England.

The necessary want of entire accuracy in the nicer shades of tone incident to all keyed instruments, such as the piano and the organ, makes them to a certain extent imperfect in securing the higher

effects of harmony. The nature of this fact and the impossibility of fully meeting it is apparent on a moment's consideration. As we have already seen, the proportionate intervals between the whole tones are not of the same measure. Thus between the 1st and 2d, the 4th and 5th, and the 6th and 7th notes the intervals are as 8 to 9; while between the 2d and 3d and the 5th and 6th they are as 9 to 10. When now in transposing the scale, the 5th is taken as the 1st, the interval between this and the 6th, being only as 9 : 10 instead of 8 : 9, must be slightly lengthened so as to make the 2d of the new scale preserve the natural alternation of tone. The pitch, in other words, of *re* in the scale of one sharp is slightly higher than of *re* in the natural scale. The voice readily makes these required changes of pitch; the violinist as readily secures it by very slightly shortening or lengthening his strings in fingering his instrument; the flutist with comparative ease, accomplishes it by varying the angle at which he blows into his instrument or in the pressure of his fingers on the holes increasing or diminishing their size, and allowing a greater or less escape of air, and thus increasing or diminishing the velocity and force of its vibrations. But in keyed instruments, in the piano the length of the string, in the organ the angle of the wind's pressure and the size of the orifice, are fixed in the mechanism; and no fingering can vary them. The only possible resort is to what is called "tempering;" the fixing, for example, of the 6th note of the natural scale not precisely at an interval of 8 to 9, nor of 9 to 10 from the 5th, but at an interval intermediate between them; so that the fraction, reducing both to a large common denominator, shall not be $\frac{8}{9}$ or $\frac{160}{186}$, nor $\frac{9}{10}$ or $\frac{162}{180}$, but $\frac{161}{180}$.

Sect. 4. Musical Composition; the impressions on the sensibilities sought by music; the modes of writing music; the major and minor chords and their æsthetic effects; the keys and ruling notes in musical composition.

No pleasure is of a lasting and noble nature unless some end for good is attendant on its pursuit; and when from being the mere unconnected hum of the child at its play, singing becomes a connected strain, the subject of musical composition is suggested for consideration. Musical composition relates directly to the musical strain alone which the musician employs, whether performed by the voice or instrument; the sentiments or words which may be connected with the strain belonging to the subject of Musical Expression. Musical composition is designed to promote individual gratification,

incitement to public deeds of heroism, and the awakening of religious enthusiasm. The private, as well as public dance, is made artistic and pleasurable chiefly from the musical accompaniment; and in sacred and profane history,[1] as well as in universal present practice, the one is the natural stimulus to the other. The march of armed men, heavily burdened with accoutrements and provisions, is a toil which would be intolerable but for the nerving impulse produced by martial music; and even the camels of the Desert of Arabia in their weary journey are seen to walk with a quickened and more buoyant step as the soft notes of the flute are struck up by their riders. Every form of religious worship also, not more the idol adoration of ancient Egypt and Assyria,[2] and of modern Asia, than the philosophic idealism of old Greece and of youthful America, alike the most formal and the most spiritual devotion of Jewish and Christian assemblies, has employed instrumental as distinct from vocal music. As under the Old Testament the use of instrumental music is commanded to Moses who was required to make silver trumpets for the tabernacle service, and was hallowed by David and Solomon, who exhausted the skill of human genius in the grandeur of the orchestra for the Hebrew temple, so in the New Testament we are taught by the example of Christ, who sang a hymn with his disciples, and by the allusions of Paul, who speaks of the pipe and harp as associated with the "singing of hymns and psalms" in early Christian worship, and of John, who pictures the delights of the upper world itself as enhanced by "the music of golden harps."[3]

In order to meet the ends thus sought, music must take a composite form. Even the child, pleased but a short time with the unmeaning note of a whistle or trumpet, catches with eagerness and repeats with exhaustless delight, the infantile lay of the nursery, or the rude song of the streets. Long before any method of writing, either the words of language or the notes of music, is understood, among savage peoples, a crude combination of successive notes formed into tunes is heard from their rude pipes and viols; which, so perfectly conformed to law are all nature's unstudied promptings, scientific travelers have been able to put into the form of a written composition. The early Greeks understood the art of written musical composition; though their methods of notation are lost.

In the modern writing of music five parallel lines with four inter-

[1] Job xxi. 11, 12; Exodus xv. 20; Luke xv. 25.

[2] Daniel iii. 5.

[3] Numbers x. 2.

vening spaces, called the "staff," furnish a scale upon which the notes indicating the pitch and succession of tones are inscribed. The four ordinary parts are usually written on four, though sometimes on two separate staffs. That all the notes within the compass of the voices of different pitch may be brought into the range of the staff, the first note of the scale employed in any piece of music is written upon a higher or lower line or space upon the staff, according to the natural pitch of the voices performing each part. The place of that first note is indicated by a character called a clef or key; of which there are usually three. The first called the G "clef," or key, has G on the second line from the bottom arranged for the treble or highest part. The second or C clef has C on the first line for the *soprano*, on the second line for the *mezzo-soprano*, on the third line for the *alto*, and on the fourth line for the *tenor*. The third called the F clef has F on the third line for the barytone, and on the fourth line for the bass.

In the practical business of musical composition the principles of "accord" and of "harmony" are brought into requisition. To become master of all the minute variations of tones, half tones and quarter tones, and of their consonance in perfect chords, as well as of their frequently agreeable partial dissonance when sounded together, and thus to attain to the *symphony* of the Greeks, to add to this the consistent and grateful lapping and blending of consecutive chords as they chime in after each other in a continued musical strain, and thus to reach the *harmony* of the Greeks, and then to embody in musical composition this concurrence of chords and succession of harmonies, demands a comprehensiveness of study, an acuteness of critical skill, and a grasp of genius equal to that requisite in the higher fields of plastic art. Haydn and Mozart were the Lionardo and Angelo of music; and Beethoven was a Raphael.

The chords take different technical names in the vocabulary of the musical composer; serving as they do for aids in the analysis and synthesis he must employ in his work. The "common chord" consists of three different notes in the scale sounded together; and it is called a "perfect" chord when the first, third, and fifth of the same scale are thus united in sound. Chords are called "close" when the three notes in accord are within the compass of a single octave; and in this there may be three combinations; the chord of the first, third, and fifth; the chord of the third, fifth, and octave; and the chord of the first, the fifth, and the octave. Chords are called "dispersed" when the intervals between the three notes in

accord extends beyond the compass of an octave; and in these there may be also three combinations; the chord of the first and fifth of one octave, and of the third of the octave above; the chord of the third and octave in one scale, and of the fifth in an octave above; and the chord of the fifth in the octave below, and of the third and octave in the fundamental scale. In all cases a proper chord includes three notes; the leading note of which, called the fundamental, may be either the first of the scale adopted, or its octave, which is also the first of the octave above, while the other two notes of the chord must be, one a third, and the other a fifth, located either in the octave of the fundamental note, in the octave above, or in the octave below. As the same chords are found in each of the scales in music, either the natural scale, or any one of the scales of sharps or flats, so virtually any one of the notes from first to seventh, or of the letters from A to G, may be selected as the fundamental note. The variety of tones in perfect chords may thus be made almost without limit.

The class of chords which furnish the sweetest harmonies and afford the true field for art in musical composition are the "major and minor chords." To gain a clear conception of these it is necessary first to observe the nature of the distinction between what are called "major and minor intervals." When the voice in ascending or descending the scale passes over but one interval, striking the note next succeeding, that interval is called a "second." If this interval be a whole tone, as between *do* and *re*, it is styled a "major" or greater second; or if a half tone as between *mi* and *fa* it is called a "minor second." Again, if the interval passed over be two notes the last struck is called the "third;" if these two be whole tones, as from *do* to *mi*, it is called a "major third;" if it be one whole tone and a half tone as from *re* to *fa*, it is called a "minor third." The designations in transitions to other notes are as follows: a fourth is called "perfect" if made up of two tones and a half tone, and "sharp" if composed of three tones; a fifth is called "flat" if it have two tones and two half-tones, and "perfect" if it have three tones and one half-tone; a sixth is called "minor" if it have three tones and two half-tones, and "major" if it have four tones and a half-tone; a seventh is called "flat" when composed of four tones and two half-tones, and "sharp" if composed of five tones and one half-tone. All eighths, or octaves, are necessarily alike in length of interval; being five tones and two half-tones distant from each other. In each common chord, made up of the first, third and fifth, there

will necessarily be one major and one minor interval. If, for instance, C be the first or fundamental note, from C to E is a major third, and from E to G is a minor third; while if D be taken as the first or fundamental note the interval from D to F is a "minor third" and that from F to A is a "major third." The names of chords as "major" or "minor" are derived from the lower of the two intervals; the chords having D, E and A as the fundamental note being "minor," while those having C, F, and G as fundamental are "major chords." As the minor chords are sounded, the ear recognizes a slight clashing of the vibrations occasioning a partial dissonance, whose effect is to soften the sharp ring of perfectly chiming vibrations, and thus give a subdued tone to the strain in which they predominate. Minor chords therefore are adapted to produce pathos, while the major chords are more elevating and grand.

In the succession of notes in a musical composition having three or more parts, the human voice does not naturally pass from one chord to another of extremely different character. There are rules in nature for the succession of notes and chords which men without art have adopted; as they have rules of grammatical forms and of syntactical succession of words. Of these rules by which they are instinctively guided an unlettered people using them may be entirely unaware; as were the Creek Indians, until their attention was called by a missionary of intelligent mind to the fact, that their verbs had regular modes and tenses and their adjectives regular forms of comparison. The principal laws of that succession of chords which constitutes harmony are the following. *First*, any chord may be followed by another chord having the fifth of the preceding as its fundamental; and as this chord seems to be the simplest of successions and to be naturally followed by the repetition of its preceding chord, the chord of the fifth has been called the *dominant* or "leading" chord. *Second*, any common chord may be succeeded by one whose fundamental is a fourth above or a fifth below that of the preceding chord; and this is called the "relative-major" or *sub-dominant* chord. *Third*, any common chord may be followed by a chord having the sixth of the preceding chord as its fundamental note; and this is called the "relative-minor" chord. Certain intermediate tones as passing notes may be interposed between the chords mentioned; and some of the finest effects are produced by the introduction in one of the three parts of the chord of a short dissonant leading the way to the principal note which is in consonance; the richest chords having as one of their elements a slight introductory or concluding discord.

There is a special control of notes upon each other in the progress of the voice in a piece of music always exhibited in the simplest songs of unlettered tribes from which art educes principles. The *tonic*, or key note, is the chief sound on which a melody is constructed; the note which is repeated oftenest in the progress of the song, and with which it ends. The *dominant*, or fifth above the key note, is so related to that note as to be said to rule; having such an influence that whenever repeated before the key note the hearer expects it to be the indication of a fall of the voice, or cadence, closing a strain; and it is always heard in the final cadence in the bass. The *sub-dominant*, the fifth below the key note, is a sort of ruling note, requiring the key note to follow it in some cadences. The *mediant* is the middle note between the *tonic* and *dominant*, and the *sub-mediant* is the middle note between the tonic and sub-dominant. These notes are specially to be observed, in music of major and minor keys constructed upon the chromatic and enharmonic scales. Their bearing on proportions of lines addressing the eye will be hereafter considered. It is an interesting fact that the superior or Brahminic race of India have a similar designation of the tonic, mediant and dominant notes in their musical compositions; this fact indicating another of those connections between Grecian and Indian philosophy, science and art which points to this people as the fountain whence the first streams of culture went westward into Europe.

Sect. 5. Musical Expression; the adaptation of musical strains to the expression of poetic composition, and the classes of sentiment to whose expression music is adequate.

Musical sounds united in composite strains produce through the ear a pleasant impression upon the human organism aside from any sentiment conveyed to the mind, or any appeal they may make to any special sensibility of our nature. This, however, is to be regarded, doubtless, as an incident to a higher design, as but a means to an end. Music, like the other fine arts, never assumes its high character, so as to be esteemed noble, unless it is made the vehicle of important sentiment and the awakener of practical emotion.

Sentiment is expressed in language; and that is embodied in words. There is indeed a natural language; as Lord Kames and others have argued in works on Criticism. There are modes of expressing thought, feeling and desire, which the instinct of animals teaches them by signs to make known, both to their kind and to

man; and that human beings have superior power in "sign language" is amply manifest in the extent to which in the instruction of deaf mutes this mode of communicating every variety of thought and feeling is carried. Hence the fondness which has always been observed among men for *pantomime;* especially when it is made to accompany music. Still, any exhibition of this power, when practiced alone, and as an interesting exhibition of human skill, is attractive only until its principles are understood and its novelty exhausted; when the mind demands more eagerly than before the short and complete method of conveying sentiment furnished by words. Music, therefore, even with the child, is soon accompanied by the words of song.

When language is thus made to keep company with song, it is observed that, as there are tones of high and low pitch, and notes long and short in music, so there are long and short syllables in words and rising and falling of the voice in the utterance of sentences. The rudest performance of music accompanied by song required alternation of sentences and clauses of similar length, and the rise and fall of voice in successive portions of each strain; both parallelism and cadence being the first elements of all poetry. Increased refining of the musical scale demanded again that parts of sentences and clauses should be arranged into what were called feet, with a given measure; so that the voice should preserve an even pace in the combined utterance of tones and syllables, and that the alternations of the two should keep step with each other; and thus rhythm was introduced as an element of poetic expression. Still again, as the strains of music are of fixed length, and as the key note is the natural terminator of the cadences, so song soon came to add rhyme to rhythm, or the recurrence at fixed intervals of words, or syllables, of similar sound. Hebrew poetry both in itself and in the manner of chanting it, now employed in the synagogues of the East, seems to be perfect as illustrating the *parallelism* and *cadence*, which is the first essential of words adapted to musical expression. Greek poetry, and after it, the Latin, surpassed all probably that the world has ever seen in the perfection of its *rhythm;* every syllable in each successive foot being as nicely adjusted to its associates as the parts in the human body are fitly joined together. The English verse again has excelled in the attribute of *rhyme;* little regarded by the ancients. The most striking illustration in the range of human languages of the close relation between music and poetry is found in the modern Italian. While it is the language of music and

the arts generally, the Italian is in itself so constructed, its five vowel sounds being always pure and unvarying, and its syllables consisting almost without exception of a single consonant and vowel, that no one can help speaking, if he speak at all, in both rhythm and rhyme; a characteristic of their native tongue, which makes the business of the far-famed extempore poetizers, called "*improvisatrice*," a very easy task.

The subject of Expression in Music, and its relation to Poetry, naturally presents three points for consideration; the character of the poetic feet employed to express different movements of the mind; the structure of the verses adapted to different classes of speakers supposed to give utterance to the sentiment embodied; and the style of music as to key, range of pitch and stress of voice in harmony with different emotions represented. In each of these the Greek led the way to the true science of this art; though modern composers, particularly the German, have in this latter respect, carried what the Greeks began to an extent of perfection which the ancients probably never attained.

The Greeks, who were the leaders of mankind in the adjustment of definite measures and fit proportions, had no less than twenty-eight feet, simple and compound, made up by different arrangements of long and short syllables in combinations of two, three, or four members each. The adaptation of these classes of feet to different sentiments is often indicated in their names, as in the four feet of two syllables; the "spondee" or *votive*, two long, used in the solemnly-slow, prayer-like dirges accompanying offerings presented to the gods; the "Pyrrhic" or *warlike*, two short, breaking forth amid the furious darting of the war dance and song; the "Trochee," or *running*, a long and a short, falling on the ear like a horse's gallop, and tripping in sportive roundelay; and the "Iambic" or *sportive*, the flippant trolling upon the tongue of satirical song, intensified in the Choliambus or halting Iambic. The nice gradation of proportion entering into the movement of syllables, called in general long and short, though of varied proportion in length, is indicated in such names as "dactyle" and "anapæst;" the former like the fingers, having its three parts sesquialteral, each one and a half of its successor; while the "anapæst," or *rebounding* was the reverse or counterpart of the dactyle, a short, medium, and long syllable.

The subjects of poetry and music to which it was set was equally varied. There is not in the range of history a more striking illustration of this than in the collection of the inspired Hebrew poetry.

Beginning with the exultant Song of Moses, chanted by his sister and her train, what could be more impressively varied than the philosophic drama of Job almost epic in movement, the sweet but thrilling passion in the lyrics of David, the quiet and didactic maxims of Solomon, the grand majesty in the prophecies of Isaiah, the plaintive pathos in the lament of Jeremiah, the glowing enthusiasm in the visions of Ezekiel and Daniel, and, not to mention other of the twelve minor prophets, the awing sublimity of Habakkuk. Among Greek poets there was a yet nicer adaptation of the length of lines and the recurrence of syllables of different compass, to the movement of the writer's thought. When the triumphs of heroes in war were recited, the verse took the stately tramp of the heroic or epic metre; made up in the Greek or Latin verse of six succeeding spondees and dactyls, thus giving from twelve to seventeen syllables in the line; which, in the later English epic, has been shortened into five Iambic, with the occasional introduction of feet of other measures. When the hymn of reverential adoration to the gods was to be sung, the slow and solemn movement called spondaic was as naturally sought, or rather fallen into by the bard. When the endearments of love were the theme, the amatory song could find no expression but in the lively Trochaic or graceful Iambic; and yet, again, as intimated, the fierce and furious war song ran instinctively into the jerking Pyrrhic. The epic, lyric and Pyrrhic styles in poetry were thus directly associated with *expression* in music. The Tragic Muse again sought a combination of the more elevated styles; mingling the stately heroic, the solemn dirge, and in the chorus the lightest and gayest of metre in verse and of accompaniment in music. The germ of the combinations of modern times had its root and bore its fruits in the early periods of Greek refinement; and the nature and necessity of studied regard to expression in music was never better set forth than by such minds as Plato and Plutarch.

There is no art whose adaptations to the production of moral influence has been so studied and guarded as has that of music. The Chinese moral teacher, Confucius, wrote: "Wouldst thou know if a people be well governed; if their manners be good or bad. Examine the music they perform!" In his discussions as to the model Grecian Republic, Plato makes Socrates dwell with special earnestness on the imperative necessity of governmental control over the music of the common people. To this end the "four sounds of notes" and the "three species of rhythm," whence "the whole of harmony proceeds," are discussed in detail. The shrill and

exciting pipe as a specimen of wind instruments fitted to stir men to deeds of daring in war, is to be discarded for the lyre and harp, and other stringed instruments promotive of the soothing influences attendant on peace. The special influence of the Iambic, Trochaic, Dactylic and Spondaic measures are discussed; and this principle is laid down as one all-important: that the Laws regulating music ought never to be altered except from strenuous reasons of public policy.

The indirect influence of musical movement on poetry leads to a natural final reference to the question, whether music can be adapted to the expression of every variety of sentiment. Lord Kames, in common with many able critics, has argued that music cannot be made expressive of sentiment inspiring dread; since in its very nature it is designed to please and soothe. It is questionable whether the name of music is applicable to the harsh braying of trumpets and the din of rattling drums and gongs, employed not only by rude, but also refined nations, to inspire terror on the battle-field and awe in their horrid religious rites, unhinging, as it naturally does, the control of men over their nervous systems; any more than the term musical can be applied to the unearthly yells of savages in their war-whoop, and to the shrieks of religious devotees which produce the same unnerving effect on the human sensibilities. Yet the modern attempts of the greatest musical composers to produce not only the impression of grandeur, but also of awe, if not of terror, in their sublimest oratorios, is capable of a defense on philosophic grounds. The dying gladiator and the Laocoon in Sculpture, awaken the same impression of horror as that aroused by the actual scene when witnessed by the eye. It seems legitimate, therefore, to conclude, that as in nature the ear is addressed by sounds that horrify, by the rolling thunder, the howl of the gale at sea, and the crash of dashing air, water, and earth, so to a certain extent music may be made to imitate these and kindred sounds, and thus art produce the impression of nature. It is, however, most certainly a hazardous field to enter, and one where success is most doubtful. None but a master, and he only in occasional and rare combinations, can attempt it without signal failure. The range of varied expression in music is sufficiently wide and inviting, if this be excepted.

SECT. 6. MUSICAL MODULATION; THE GENERAL RELATION OF MUSIC TO PITCH AND CADENCE OF VOICE; AND ITS SPECIAL RELATION TO THE ENUNCIATION OF DRAMATIC COMPOSITION IN HISTRIONIC ART, AND OF DIDACTIC COMPOSITION IN ORATORY.

For the purpose of proper expression poetry that is to be chanted or sung, and the musical strain which is to be its accompanying utterance must be nicely adjusted to each other. Here the relation of music to expression is direct and necessary. There is moreover an indirect relation of music to all forms of utterance with the voice, even of words in the commonest discourse; which fact has always been remarked by careful observers of men, while the principles involved in the fact have assumed rank as an art to be cultivated.

In Music the subjects of Expression and Modulation are closely associated; as they are also in their applications in the Histrionic Art and in Oratory. Modulation is properly the passing of the voice from one key to another. The keys of the natural scale, and also of the scales of sharps and flats have been already noticed. The changing sentiment in a poetic composition set to music sometimes demands a change of the musical key to secure a more perfect adaptation of one to the other. This is called modulation; and in itself it is an artificial means to an end, designed to promote expression; and when skillfully employed it secures the highest effects of the Musical Art.

Modulation as relating to expression has another important application in what are called the "Minor Scales." In all the scales thus far considered the half-tones have come between three and four and between seven and eight; and these to distinguish them from the "minor scales," here considered, are called "major scales." In the minor scales the half-tones in ascending the scale are made to come in between the second and third, and the seventh and eighth; and in descending between the sixth and fifth, and the third and second. As the minor chords have a peculiar sweetness and gentleness of tone so strains written in minor keys have a subdued and plaintive succession of sounds in themselves charming to the ear; and when united to appropriate poetic sentiment they are the Elysian fields of Musical Composition.

With the subject of Modulation may be associated the *force* or varying energy of voice denominated by teachers of music "dynamics;" and making the third of three departments of instruction in which "rhythm" is the first, and "melody" the second. Its consider-

ation belongs to the subject of "Elocution;" and it is sufficient in a treatise on Art merely to notice its connections.

The modulation of the voice in public speaking or Elocution is a subject finding place, in spite of all theories to the contrary, in every treatise on Rhetoric. Modulation in Music, as already intimated, is the power of self-control in the voice by which it passes readily from one strain to another in a piece of simple music, or from one key to another in a composite performance, always preserving ease and grace in the swell and depression of the tone and pitch of the notes successively struck. Modulation of the voice in public speaking is the kindred control of the vocal organs in passing from a quiet didactic paragraph to one calling for emphasis on account of the glow of the imagery employed or the intensity of any emotion expressed. They have a natural connection in history, and in the nature of human utterance with each other.

In the expression of thought in private conversation the voice is not perceptibly influenced by any rule of modulation. Yet when even common conversation becomes animated, or even when at different distances and for different purposes, men, in their ordinary business, address each other, a variety of tone is heard; and we soon come to distinguish the tone of command of a master or captain from the tone of the same person in different address. When a public speaker is elevated upon a stand with the special end of addressing an assembled audience in protracted discourse, and his object is to please by the ease and smoothness of the tones of his voice as well as to instruct and move by the sentiment uttered, when a tone and pitch are required which shall be distinctly audible to the most distant while it is not disagreeable to those near the speaker, a careful discrimination is needed in assuming the right pitch even at the outset. Still more as the mind warms with the progress of thought and new classes of conceptions arise and are presented, and sudden emotions awake and break forth, fresh and changing modulations of voice are of course demanded. It would seem from careful observation of the universal natural resort of uncultured speakers among rude tribes of men and in uncultivated sections of civilized countries, that since musical or ringing tones are those in which transitions of the voice are most easily made, there was a natural origin for that succession of tones popularly called "sing-song." What was thus *naturally* introduced became an art, more or less mechanical according to the lack of genius in some who attempted public speaking; and thus what in a speaker of genuine genius aided

in riveting attention, became a humdrum, that, in a speaker without animation, degenerated from an awakening charm into a soporific lullaby. That this musical modulation is natural is seen in the fact that not only do the rude orators of uncultivated nations fall into it in their harangues on secular topics, but also that the first uneducated and earnest heralds of every new religious reformation employ the same natural method; while, as among the sect of "Friends," it is continued as a religious practice revered for its sanctity even where the highest literary culture prevails. That this resort to musical modulation for oratorical effort is not a mere suggestion to men in a state of nature when uncultured, but is truly an art, having laws based on refined principles of eloquence, is seen in the fact that such men as Demosthenes trained the modulations of their voice to the accompanying notes of the flute; a practice of the finished orators of Greece to which Cicero alludes in his treatises upon oratory.

It is however in the Histrionic Art that this association of Music with Oratory has been most marked and operative. In the pronouncing of the drama in its simplest and purest form, as immortalized by Æschylus, Sophocles and Euripides, the interlude of the Chorus played an important part; the choir coming in between the Acts of the Drama to fill up the interval now occupied by instrumental music while the curtain is down and the scenery is changing. As this Chorus was mainly a narration of the history which connected and illustrated the scenes preceding and succeeding, the speaker's vocation took naturally the designation, "histrionic art."

It is worthy of note that in the age of popular freedom among every cultured people, public speaking has taken the character of oratory, or eloquence proper; the speaker being a real leader and sovereign among his countrymen, addressing a real auditory, and seeking a positive influence over them by his addresses. Such was the conviction of Moses, the inspired Hebrew legislator, himself ungifted as a public speaker, that this power alone was adequate to his Divine mission, that he seems almost irreverent in urging it on the All-Wise Master who sends him; till that Divine Wisdom seems to yield to human conviction, and Aaron the eloquent orator is sent with him.[1] Eminence in oratory has been sought as the essential and climatic attainment of ruling minds among all branches of the advancing Japhetic race; as is seen in the fact that Demosthenes and Cicero were formed by the culminating influence of Grecian and

[1] Exod. iv. 10—16.

Roman civilization. The laws of the Visigoths made the power of commending laws to a popular assembly the chief requisite in a legislator; while the whole history of modern Europe shows that popular advancement keeps pace with the development of this power. In the ages and lands overshadowed by the supremacy of despotic power, either civil or ecclesiastical, oratory proper is uncalled for; and the fictitious eloquence of the histrionic art is the more in demand. The attentive student of systems of education cannot but remark that the training of young men as public speakers for the pulpit or the platform will be made to take more or less the features of one or the other of these departments of elocutionary study, according as that training is adapted to a more or less fixed and formal system of civil and ecclesiastical polity.

In very early times there was originated the higher union of Music, Oratory and the Histrionic Art, ennobled in later times in the "Oratorio" and the "Opera." The theme of song, or poetry chanted in the Chorus of the Greek Drama was in continuation of the sentiment uttered by the actor who performed the "histrionic" part; or, as the name implies, gave the recital of the *history* of the play. It was a natural suggestion of later times that music should be united with the speaking and acting throughout the whole play. When the musical accompaniment was set to the words of a drama, and the recitation was an unexcited chant much like a dramatic reading, and without special acting on the part of the performers, it took the appropriate name of an "Oratorio;" because it was a quiet address like that of a suppliant in prayer to his God, or of a preacher addressing his auditory. When there was added in the Oratorio the accompaniments of stage representation, scenery, dresses, and the gestures and action of the stage, the performance took the name of "Opera;" the designation given to the collected writings of men of varied genius; the Opera being as the name implies the gathered treasures of all arts addressing the ear, and their skillful union into one complete whole. The choral interludes of the Greek drama were the germs of this art; but the rise of the Opera proper is traced to Italy and the close of the fifteenth century; the climactic era of discovery and invention in science and art as known in modern times.

CHAPTER IV.

THE SENSE OF SIGHT, THE HIGHEST OF THE SENSES, AS ADDRESSED BY ART.

The eye is the special organ of the human body by which the mind is addressed by Art. The range within which the ear is restricted in the hearing of pleasant sounds is a very limited one; for the music that falls with such mellowness at a slight remove from its source is soon lost by increasing distance. On the other hand, the stretch of vision is into regions without bound; and is literally fathomless, going beyond the most distant stars and nebulæ. Again, the variety in objects of beauty occupying but a small space around, seems perfectly limitless; while there are, in comparison, but few varieties in the natural tones, even of music, that address the ear. Most of all, the several separate sources of delight in objects of sight make their own distinct and peculiar appeal to our æsthetic nature; while the addresses of sound are essentially one in kind. The special development of each of these several sources of æsthetic appeal will come up for consideration, each in its appropriate department of art. A simple classification of the elements of visual impressions which please the mind through the eye may aid to definiteness of views in that consideration.

SECT. 1. FORM; ITS PRINCIPLES AND THEIR CONCURRENCE AS THE GROUNDWORK OF ART.

The forms which delight us in Nature are of varied character. Some are minutely apprehended by the eye near at hand, as the parts of flowers and the features of the human countenance; others are but dimly comprehended in the distance, as the sweep of towering mountains, the swell of the ocean in the horizon and the blue arch of the sky. Some are of fixed form, as plants and animals, the sun and separate stars; others are of figure unfixed, as rocks and star-clusters; while others still are of undefined and indefinable outline, as waves and clouds. Of fixed forms again there are mineral, vegetable, animal, and human; the first having only the physical forces of nature as the law of its formation; the second having also life, the third self-originating motion, and the fourth intelligence, to give to them their special attraction as forms.

The *outline* of all forms is composed of lines; and lines are redu-

cible to two classes, straight and curved. The lines formed by crystallization are straight lines, inclined at fixed angles to each other. The path of a beam of light, of the vital force which acts upward through the longitudinal fibre of plants, and of the motion of bodies acted upon by a single force, is a straight line. A large portion of the works of men, as in architecture, are composed of straight lines. Every portion of the natural creation, in plants and animals, is based upon the union of curved with straight lines; the trunk of every tree and the limb of every animal having its length in straight lines and its circumference in curved lines. Straight lines may meet each other at large and infrequent angles forming broken lines; and at frequent and sharp angles producing a zig-zag. Curves may be of any regular figure, as circular, elliptical, parabolic, spiral, etc.; or they may be irregular, waving, serpentine, convoluted, etc.

Single lines have but one dimension, length alone; and an outline is but a combination of lines enclosing a space. Form is conceived as possessed of three, or at least of two dimensions; the enclosed space between the parts of the outline being regarded as a continuous surface, and, more, as having projected before the solid mass a third dimension. Figure, as its Latin derivation and English usage indicate, is properly the conception of the designing mind, as separate from the embodied object; while form is the actually executed object of which figure was the conception. Figure, therefore, is a term applied to conceptions embodied only in words, as figures of rhetoric; and thus it is a designation belonging to Poetry as a Fine Art. Form is the word adopted to express the creations of the Plastic Arts. Figure, if applied to executed forms, is limited to those which are but representations, not actual specimens, of the things considered, or modifications by art of a natural object; as when we speak of mathematical figures, and of the figure of a man or woman whose form is modified by dress. Form, therefore, is the generic term expressing the elements in objects of sight giving the impression of extension to the eye.

A careful study reveals several distinct elements inherent in the construction of forms in nature, which, when viewed separately, furnish each its respective delight. The mind seems in its analysis of forms to pursue the following train of observation, and to note in their order these particulars.

First: Outline in substance.—Substance, considered alone, arrests our attention and gives a species of pleasure; as when we gaze in admiration on the green sea or blue sky, on the black thunder-cloud

or the rosy dawn. The delight we experience from this source is not the attraction of form. When, however, the eye traces the outline of a billow, a cloud, a horizon line, or a rock, however indistinct, indefinite and fragmentary the form, the mere *outline in substance* gives us pleasure.

Second: Unity in Multiplicity.—The mind has an oppressive sense of discomfort when confused objects which it cannot distinctly define, are passing before it, and it can give no unity to the multiplicity of forms. Dim glimpses through the fog of an occasional headland along the coast affect the mind unpleasantly; but a thrill of delight is felt when the mist is lifted and the multiplied forms along the shore are taken in as a whole. Crowds of people without order thronging along the streets have little attraction; but when column after column of men, marshalled in military ranks, pass in review, the very word *uniform* which designates their dress is the index to the principle which gives rise to our pleasure. A sand bank is as fine an object for the pencil as the solid rock when it is viewed at such a distance as to make it one in its impression on the eye.

Third: Regularity in Complexity.—A line is regular when made by one rule; as a circle or parabola; and the pleasure derived from beholding such a form, executed by a school-boy, is manifestly opposed to the aversion experienced in beholding diagrams irregular and drawn in a slovenly manner. Forms consisting of two dimensions, length and breadth, must have greater or less multiplicity of parts; and figures of three dimensions, length, breadth and thickness, must have complexity in the adjustment as well as multiplicity of parts. In plain figures made up of straight lines of either *uniform* parts as a square, hexagon, etc., and also those of parallel or *uniformly recurring* parts, as the rectangles either perfect or truncated occurring in door panels, are *regular* figures. The five *regular* bodies, as the pyramid, bounded by four equal triangles, the cube by six squares, the octohedron by eight equilateral triangles, the dodecahedron by twelve equal rhombs, and the eikosihedron by twenty equilateral triangles, were known to Plato; and the beauty of their regular shapes led him to regard them as the ultimate elements making up the great "Cosmos" or "Universe of Beauty." The four regular curves that are formed by cutting sections through a cone, the circle, the ellipse, the parabola, and hyperbola, were known to the early Greeks, and the admirable law of their formation was calculated; their beautiful sweep entered as an element into Pythagoras' conception of the harmony of the universe; and Galileo and Sir Isaac

Newton saw in them a principle of truth and beauty which led them to the secret of the mechanism of the universe.

Fourth: Simplicity in Variety.—The principle of simplicity is opposed to the unchaste and tawdry; to everything, in fact, that is not the simple thing itself which we regard. Rightly considered, Simplicity, so prominent in the mind of Lord Kames and other writers upon Criticism, is as distinct from Unity as is Variety from Multiplicity. There may be unity in the multiplex curls and bows of the head-dress, so favorite in fashion a century ago, but so hideous to modern eyes; but there is a simplicity in the modern style of dressing the hair, by a central parting in front, and straight combing to the form of the head backward, and its collection in a plain knot behind, which won the admiration of the Greek artist as a perfect ideal, which drew forth the enthusiastic plaudits of Roman poets, and which now gives a charm to fashion because of its inherent beauty. There is grandeur in the majestic dome of the Roman Pantheon, especially when hung in the air, as over St. Peter's by the genius of Michel Angelo; there is sublimity in the sky-piercing pinnacle of the Gothic cathedral at Strasburg; but the inimitable simplicity of the plain gable of the Grecian Parthenon won from Cicero, familiar as he was with the opposite Roman styles, that suggestion 'that it was worthy to be the model for temples in Heaven.' That variety which is secured, not at the expense of chasteness and by the heaping up of tawdry ornament, but by an adjustment of drapery which makes the form seem to round out in all its own loveliness through the robe which acts as a transparent veil, is one of the chief charms of beauty in form. Nothing could be a greater violation of this law of simplicity than the multiplying of varieties by mingling the attributes of quadrupeds, of birds, and of men; as in the Egyptian Sphynx, or lion, with a woman's bust, and in the Greek centaur, or horse, with a man's breast, arms, and head. In this respect, the winged bull of Assyria, and the Christian angel, or man with wings, must probably be ranked in the same class.

Fifth: Order in the collocation of parts.—All the previous considerations relate to an object as one whole; but *order*, the first of a second class of principles, necessarily draws attention to the whole as made up of parts. It is the relation which parts considered as making up a whole have to each other. Order, as it relates to furniture in a room, requires that each separate piece be in a place peculiarly its own. Order may be secured in view of a single principle, and upon a system complete in itself; as in the arrangement

of men in a military company, either according to age, or size, or tested courage. The eye demands order in the parts of which any object, either natural or artificial, is made up. It is essential in a statue, because there is an order in which the Creator has ordained that the natural features of the face should be arranged, and after which the head, neck, body and limbs, should succeed each other. In general, order relates to the collocation of parts which make up a whole.

Sixth: Proportion in dimensions.—Proportion is not the relation of parts to a whole, but of parts to each other. Thus the three portions of the human finger are proportional; the ratio of each to its successor as to length, being sesquialteral, or that of one to one and a half. The upper members of the human frame, as the arms, considered with relation each to its fellow, are *uniform;* as are the lower limbs: but when considered not in reference to their fellows of the same class, but to each other as of different classes, the arms and legs are *proportionate* in length. The parts of a building are said to be well proportioned when on comparing any two portions of the façade, or of the inner or outer structure, together, they seem to be in keeping, so far as dimensions alone are concerned, with each other. So the columns of a portico compared with each other are uniform; but when the foot, shaft, and capital are compared with each other, or the whole column with the entablature above, they are said to be well or ill-proportioned.

Seventh: Symmetry in the connection of parts.—Pliny alludes to the fact that the Greek word, *symmetry,* so much employed by the artists who spoke that tongue, had no synonym in the Latin language. The word proportion, however, was Latin; and as such, used as a term of art, it has a meaning distinct from symmetry. The literal meaning of the Greek word "*summetron*" is, an *inter-measure.* It implies that one part of a whole is taken as a standard of common measurement for all the other parts. While order relates to the collocation of parts in the whole, and proportion to the respective dimensions of each part in its relation to each other part considered as separate from the whole, symmetry relates to the graduation in measurement of all the parts connected in a whole to the dimensions of one taken as the standard. The word proportion directs the attention to superficial and to partial comparison of parts as to their dimensions; the word symmetry fixes the mind on measurement in totality, in every dimension, and especially to the conjunctures of parts where they unite. We say of two limbs of a statue that they

are in proportion; and in saying this, we think of them mainly in but one dimension. We could not say that two limbs were in symmetry; we must take in the entire figure, if we use at all that specific word, and say 'the whole body is symmetrical'; and in so saying, we should regard rotundity, the thickness and plumpness of muscle, as well as length of bony framework, and the interlockings and blendings as well as the body of each limb. It was this particular idea of symmetry which led the Greek artist to the simplest and yet most perfect idea of common measures; such as the nail, finger, foot, cubit, pace, fathom; an idea which prompted the Grecian sculptor to seek in the proportions of the child, the youth, the maiden, the matron and of the mature man, nature's scale of common measurement; by following which they made their works true ideals, the models for all future time.

Eighth: Congruity in the adaptation of parts.—Lord Kames has well distinguished congruity from propriety by the statement that the former relates to physical adaptation, the latter to moral appropriateness. The principle of congruity, therefore, as an element in objects pleasant to the eye belongs to the subject of Form. Congruity requires that all the parts have an office, and that in size and position they be adapted to that office. It is an incongruity in Egyptian sculpture that a flaring head-dress should be cut in solid stone whose weight is enough to cause the wearer to sink under the burden; that in even Roman art a Mercury should have miniature wings projecting from his ankles and head which could serve no purpose because they could have no muscular attachments. Congruity requires that every part of the posture, the dress, insignia of an office or implements of a trade should be in keeping with the character of the subject represented. There is, so far as mere form is concerned, no one characteristic which so certainly points out the really great artist, as does skill in securing congruity in every portion of his work.

Any amount of space might be occupied with quotations from ancient and modern writers who present not simply the germs but the full development of the elements of form above mentioned as aiding to secure the impression of beauty. All Plato's discussions upon the subject of beauty are studded with allusions to proportion, symmetry, congruity, and other elements here presented. Aristotle has interesting discussions of the laws of truth and beauty in forms of minerals, vegetables and animals; on the proportion of their length to their other dimensions; on the reason of the spherical form of the soap-

bubble and the conical form of vegetables; all which though hypothetical in statement he manifestly resolves into immutable though inexplicable principles of truth and beauty. A page might be filled with a simple mention of the names of modern authors treating on these topics; all uniting to show the universally received opinion that in forms there are elements which constitute beauty.

It is appropriate here to mention what will be more fully developed in its own place, that there is a law in the very nature of forms seen, and of the eye that sees, which demands and secures pleasure in impressions received. In sounds pleasant to the ear it is manifest that the harmonious concurrence of successive waves in the vibrating air is the source, instrumentally considered, of the agreeable impressions called "accord." Hence since the impressions of sight seem to be the result of waves in an ether whose vibrations strike the eye, it might be supposed that impressions agreeable or disagreeable coming from dimensions as to length and breadth, and from angular inclinations and radii of curvature, might also result from vibrations in that ether, which, on the one hand concurred and harmonized, or, on the other hand, clashed and jarred with each other. The study of this interesting question as suggested by Pythagoras, Galileo and Newton, and as it has been followed up by Grecian, Italian and English artists is reserved for a separate section.[1] It is but suggested here as bearing on the general æsthetic impression produced by form, presented in this section.

Sect. 2. Color; its elements, and their co-operation as the accessories of Art.

In considering the elements of form which pleasurably impress the mind, we have observed that there is a natural order of succession in which they present themselves to our thought. A similar order may be observed in the impressions made by color. When an object breaks first on our view, we remark that there is a substance in view and we seek to trace its outline; we consider whether it be one, and if one, we scrutinize to decide whether it be simple; if made up of parts, we notice their order, then their proportion as to each other, and then the symmetry of the whole; and finally we judge of the congruity, or fitness of all the parts, so far as their form is concerned, to accomplish some design. In the observation of color as pleasantly

[1] See B. I., C. v., Sect. 5.

affecting the mind, we are conscious, if attentive to our mental suggestions, of a similar order of thought.

Though color is usually a quality of substance, and an adjunct of form, it exists where no appreciable substance can be traced; it is not in itself really an attribute of substance, but an impression on our sentient organism;[1] and it must always when analytically regarded be separated from both substance and form for consideration. The analysis of color as such, the distinction between white as the combination and black as the absence of all color, of yellow, red and blue as primary, of green, orange and purple as secondary, and of citrine, olive and russet as tertiary colors, as well as the general discussion of contrast and harmony in complementary and accordant colors, belongs to the subject of Painting. A general survey, however, of the principles of color as producing the pleasant impressions of art is here required. These principles may perhaps be resolved into the following.

First: Determinateness of Hue.—When we gaze into the heavens in the daytime, and see nothing but the light azure produced by the direct sunlight, or at night study the dark blue black of the faintest diffused light which is still present even at midnight, simple color has its pleasing charm. So too in the universal gray of a clouded sky, and in the rich gold and purple of evening twilight, which seem to have no back ground to make them stand out, and no form from which they are reflected, color in itself and as such gives us pleasure; just as does mere outline in substance. It is the determinateness of the varying yet positive hue, the fact that we can see color, which is the source of pleasure to the eye when no other quality in the object of sight is observable.

Second: Purity of Colors in themselves considered.—When color so far develops itself as to take a perceptible hue, it may be an impure mixture; blackish or grayish, and dirty in aspect. The savage, the child, the uncultured of every age and of both sexes are pleased with gaudy and flaunting hues, such as the primaries yellow, red and blue. In these least studied effects of colors the first essential requisite to the securing of satisfaction and pleasure, is, that they be in themselves, pure. The eye and the mind, cultured or uncultured, desires, that, whatever be the color of an object, it be clear, unmixed and unspotted; first, that it show nothing but its own hue; second,

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[1] See the analysis of primary, secondary, and secundo-primary qualities by Sir Wm. Hamilton.

that it be not muddied with the tinge of foreign hues; and third, that it be not soiled by scattered spots and irregular lines of another color. The savage is as much displeased with a dull, or a faded color, or by a stain on his mantle, as is the most fastidious belle in polished society. Again, when increased culture leads to the preference of the graver hues furnished in the secondaries and tertiaries, it is the pure clear tint resulting from the admixture of colors in their regular proportions that gives pleasure. The eye is never satisfied with disproportionate mixtures. The common mind signifies its displeasure by calling the latter "dirty" colors; while artists by the term, "lively" applied to the former distinguish the one from the other as a decayed and dying plant is distinct from a living and thriving stalk whose very vitality is its beauty. Whatever be the hue which taste selects for address to the eye it makes the same demand for purity in color as for unity in form. Indeed purity is unity in color.

Third: Evenness of body.—When viewed alone, a color must be pure in order to be pleasing. Color, however, is an attribute of substance; and its estimated richness depends on the substances it adorns. In a single object, evenness of color is a feature akin to regularity of form. A tree whose leaves are green from top to bottom, and whose flowers are of one hue, a house freshly painted, so that every part shows the same even coating as it comes from the workman's hand, are types in nature, and in the mechanic arts of the higher works of Art. An irregular daubing of varied colors is as unlike to the even laying on of the nicest tints by the master's hand, as a school-boy's attempt at drawing a circle is unlike the instantaneous and regular sweep of a trained artist.

Fourth: Distinctiveness in Character.—As simplicity is a charm in form because it pictures most perfectly the object represented, so distinctiveness in color impresses because it brings out the character of the object painted. The sky has distinctive characteristics, as clear, or cold, or sunlit, when its hue is blue, or gray, or rosy; the sea is known to be calm, or ruffled, or raging, according as it mirrors the varied colors of objects above it, or reflects its own green from its thin and half transparent wave crests, or absorbs all light at the black base of its swollen billows and transmits all light from the white transparence of their attenuated tops. So among the varied flowers and fruits and leaves that cover the earth as a carpet, and even throughout all the varieties of beasts and birds and of human beings, fur and hair, and even flesh tint has, in each class, if not in

each individual, its own peculiar characteristic; and Colors in nature and art are pleasing according as they are distinctive in character.

Fifth: Accordance in juxtaposition.—As notes sounded together must have a certain proportion as to their respective pitch in order to be consonant, and as two lines so near as to be taken in at the same angle of vision must have a kindred proportion in order to make an accordant and pleasurable impression, so must colors viewed in immediate juxtaposition have a similar proportion in order to produce accord. It is essential, therefore, that colors be so arranged that two discordant ones shall not strike the eye together. The flaming hot aspect of a house painted red, glowing amid the shade of the country, or the gory crimson of a ship's hulk lying on the green sea, like blood on water not mixing with it, does violence to an instinctively recognized law of order in colors. On the other hand, nothing can excel the charm of the rainbow, in whose arch, the red, orange, yellow, green, blue, indigo, and violet, succeed each other in an order that is pleasing, not simply because it is common or natural, but because we are made for it, and it for us. The law of order as securing accord, not less than that of proportion as connected with harmony of colors, will be found to be a principle of wide application in the progress of the history of painting.

Sixth: Harmoniousness as a whole in the association of colors.—It is not only necessary that musical sounds be in accord when two are struck together alone, but that the series of sounds following each other throughout a musical composition be so arranged that the voice and ear pass readily from one to the other. It is also essential to beauty in form, not only that colors arranged near each other have a proper order, but that the parts taken two and two be proportionate to each other. Though two notes struck together make discord, the same two struck separately, but successively, may produce harmony. So two colors which, meeting the eye together, produce a disagreeable impression of jarring on the vision, may, when distributed at fit intervals, and of proportionate breadths, give harmony to the whole. This is illustrated in the case of the rainbow first referred to. It is not simply the order in which the colors succeed each other, but the grouping as a whole, the proportionate breadth, the adjusted place, the graduated vividness of each which produces the pleasant impression. The more nature is studied, in the stars not bedizening but only bespangling the blue sky, in the white caps of the ruffled ocean set off by the graduated intervals of dark waters beneath, in the varied hues of flowers not overloading

but simply studding the background of green, and in the contrast observed in the hairy coats of quadrupeds, and in the plumage of birds, and even in the distribution upon the human face of light flesh color interspersed with the ruby of the lips, the ivory white of eyeballs and teeth, the whole arched by the dark lines of eyebrows and eyelash, there is in all these colors just that amount of contrast which gives greatest completeness to the whole.

Seventh: Blending in conjunction.—Modulation of voice, demanded in elocution, and even in ordinary speech as truly as in music, is the easy transition by which tones melt and flow, and mix like fused metals into each other; and symmetry in form is the similar tapering, and morticing and dovetailing of the parts compacted into the one living statue. So blending in colors is the imperceptibly varying shade, the nicely graduated scale of modified admixture by which one color flows into, and, like clear and muddy water brooks meeting, loses its own hue in that of its fellow. No possible line of distinct demarcation can be traced between the distinct colors of the rainbow; no flower has any point of separation between the white foot and the crimson or purple tip of its petal; no single hair on an animal, or feather upon a bird, has at any part of its length a sudden transition in the varying shade, that, from its root outward, grows darker to its tip. When the artist in his effort at copying nature fails to imitate her perfect work in this respect, every eye is conscious that the imperceptible blending of hues and shades into each other is one of the elements of the pleasure derived from beholding color.

Eighth: Appropriateness to the subject.—As in music expression gives soul to harmony, and in form congruity makes things to be real, not made up, so Appropriateness of color gives its subject the chief attribute of living beings, which is life itself. The application of this principle will be found to be varied and extensive. In sculpture it will influence the selection of material appropriate to the representation of different objects; of animals as distinct from men; of woman in quiet loveliness and grace as distinguished from man in the rough pursuits of a woodman or warrior. In architecture it will control the style of color in the material used; and in landscape gardening the amount and character of foliage introduced. In painting it will prove the artist's ruling aim to gain the power of giving to each object its own specific tinge, so that the eye without thought sees, not the image, but the thing itself through the deception of accurate coloring. In decorative art it will be the judge to

decide the strife amid the conflicting claims frequently arising between material and subject; demanding, for instance, that the color of a cast iron gate in a cemetery representing a lamb under a willow, shall be all bronze, or black, and not allowing that the tree be colored green and the lamb white.

The order of classification here pursued may not be that which every mind will follow; yet the main end it has in view, the leading of every student of art to an analysis of his own impressions in its study, may be attained by this survey. The method of illustration employed may not be appreciated by all readers; and the general principle that there is a parallel between the impressions made by tones addressing the ear, and forms and hues addressing the eye may be questioned. If, however, the illustrations chosen give any clearness to the statement made, or hint in any degree a method of successful study, they will have served their designed purpose.

Sect. 3. Fixed Relation; the association of objects presented as at rest.

Thus far objects making the impression of beauty have been considered singly and in themselves; the elements producing the agreeable impression being comprehended in those of form and color, the former possessing positive properties appreciable by other senses than sight, the latter resulting from negative capabilities which reveal themselves only to the organ of vision. No object, however, can be fully considered without the mind's resting on some of its relations. The statue with its exquisite form must stand on something resting upon the earth; the water lily with its attractive color floats on a liquid bed; the fleecy cloud flits and rocks in an airy cradle; and even the moon, rolling so far off, is held in its place by some power. In considering the beauty of any conceivable object its relations will force themselves into thought and give character to our æsthetic impressions.

When the relations of an object begin to come into review the mind resolves them into natural classes. Considered as at rest objects have certain fixed relations; and regarded as acted upon by forces within or without, physical or spiritual in their nature, the same objects have changing relations; which relations fixed or changing, enter as elements into our estimate of beauty. The principal relations, so far as Art is concerned, of objects considered as at rest are comprehended under the ideas of place, time, quantity, and

number; while those of objects regarded as changing are motion, life, action, and emotion.

The idea of *space*, in which that of place is included, is the first to which in all metaphysical analysis the mind turns. It is the receptacle in which all objects are included; it is probably the first abstract idea conceived by the child as his hand begins to reach after objects before his eyes as if he judged of their location; and, moreover, the first idea of the infinite in reference to which we are satisfied that our mental conception corresponds to an existing external reality is our conviction of the reality of space without limit.

The idea of *balance* is a subordinate under that of place. Such is our conviction from experience that every object must have a balanced rest that when a single object, as an obscure form dimly seen in the mist, is observed, we look first for the foot on which it rests. As the demands of the true made the ancient Arabian inquire after the "balancing of the clouds," so the critic of the beautiful will in scanning the relations of any work of art as a statue, look first at its balance. As no beauty of form could dispel or relieve the unpleasant nervousness which overpowers every other mental impression when a noble man or fair woman is seen to be standing in a position from which they are liable to fall, so a statue on a pedestal or even a figure painted upon canvass produces an unpleasant impression, destructive of the idea of beauty, when it seems insecure because unbalanced. The leaning tower of Pisa is an illustration of this in architecture; the youthful Jesus in the painting by Paul Veronese of the "Ecce Agnus Dei" seems to have this fault; and critical eyes have thought they detected it in Powers' Statue of Washington.

As balance is regarded when one object is viewed, so *relative position* is noted when two or more objects are associated. The principal object should always be foremost and prominent in a painting; the law of perspective making the central figure, because nearer the beholder, higher than its associates. This principle the Greeks regarded so carefully that, in ranging a group of statuary in the pediment or roof gable of a temple, they placed the central figure under the roof peak on a throne, while the remaining figures, as the diminishing height allowed, were represented, first standing, then seated, and finally reclining. This law of relative position Hogarth considered so important that he would have all groups in both sculpture and painting pyramidal in shape; the central figure standing highest or having the larger proportions. In landscape painting

even, whether copied from nature or ideal in its character, this principle is to be regarded as truly as in historical composition.

After the relations of space come those of *time*. As all objects are included in space so all events have their occurrence and succession in time; and the second abstract idea, as metaphysicians suppose, conceived by the opening reason of the child, is of time finite and infinite. In the relations of time are embraced considerations relating to day and night, to summer and winter, to ages of man's life and of the world's history. If the time conceived by a painter be noon, he must give appropriate length and direction to his shadows; and if it be winter the deciduous trees must be bare and the pines clothed with foliage. If the scene be the visit of Eastern Magi to the babe Jesus the manger must not be of modern carpentry, the dress that of Roman ecclesiastics, and the architecture that of the Middle Ages; and if the artist dare to conceive and paint the earth as it was in an ancient geological age, the barren rocks, the fern-like plants and the crocodile inhabitants must all correspond. The truth of nature and history must be so studied that every relation of time be preserved; otherwise the beauty of the whole is marred.

After the relation of time there naturally comes that of *quantity*. As there is a law of due proportion in the parts which are to make up a single object and a principle of symmetry which should control in their union to each other, so there is a due comparison in the size and interposition of objects that are grouped as a whole. At first sight the size of the interior of St. Peter's is dwarfed by the fact that every object, even the cherubs perched under the ceiling are colossal. Yet the same is true of Niagara; the first view disappoints by its apparent diminutiveness. In art and nature alike it is not until each detail is viewed alone and each feature is separately comprehended that the stupendous whole assumes its just grandeur; to which, as it then becomes manifest, the due proportion of each colossal part is essential. On the other hand, when Phidias made his colossal statue of Minerva hold her spear in one hand and a statue of victory in the other, it was true art to swell the spear shaft till it seemed a beam, and to dwarf the statue to the natural proportions of about six feet in stature; as it was when he grouped the gods in the pediment of the Parthenon to make Jupiter's eagle gigantic and Minerva's chariot horses of natural size; since thus the forms of Jupiter and Minerva, the prominent actors in the group, are made more conspicuous. In a historical painting the central figure may occupy too much space, presenting too broad proportions in quan-

tity, as in some of Rubens', or too little as in Trumbull's; while again the effort to give breadth to two distinct and distant scenes in one group may mar the effect of even such a masterpiece as Raphael's Transfiguration.

The final one among fixed relations to claim special notice is that of *number*. As already observed, there can be no single relation considered that does not involve the recognition of a second object to which the first has a relation. In the groupings of art, as of nature, a certain fixed number always limits the view; and when the number of objects contemplated becomes indefinite and without limit, the emotion of beauty subsides, and quite another succeeds. The most ancient observers of the heavens clustered the stars in groups of limited numbers, as "seven," "eleven," "twelve."[1] The Divine Teacher was accompanied by a fixed number of associates, sometimes twelve and sometimes three; as not only his biographers, but also the greatest of artists have loved to picture. The scene of all others on earth most tragic, the crucifixion, may have too many figures introduced, as in that of Titian, who sought chiefly to bring out the effects of color; or it may have too few, as in many masterpieces of Florentine artists who have striven for the higher effect of form. The student and critic of art, as well as the artist, will find his mind constantly reverting to the relation of number, as one of those to be observed in art.

The relations of objects as fixed, or at rest in reference to other objects, as they have here been treated, have been observed by writers of every age. Aristotle's Problems, as well as his Rhetorical treatises, are filled with illustrations of the bearing these principles have on the subject of art; and in this he is but repeated by modern writers. Thus Aristotle asks, "Why the bodies of deformed men look larger proportionally than those that have symmetry;" and his reply is substantially "That symmetrical forms are naturally viewed as one, while the limbs of the deformed man seem parts of different bodies, and hence appear to occupy more space." The many illustrations given by Lord Kames to the same effect, as in the divisions of a flower garden, or of fields in a plain country, indicate that art criticism is based in all ages on kindred principles of judgment

[1] Gen. xxxvii. 9; Job ix. 9; xxxviii. 31, 32; Amos v. 8.

SECT. 4. CHANGING RELATION; THE DISPOSITION OF OBJECTS REPRESENTED AS IN MOTION.

In one sense, no object is at rest; for the rock that for centuries does not change its position relatively upon the earth, is constantly moving with the earth itself. It is, however, visible motion, that recognized by the eye, which is regarded in the analyses of art. There is motion in inanimate objects, or those without life; the rain falling, the rivers flowing, the tides rolling, the clouds flying, the mountain rocks tumbling, and the volcano heaving; while beyond the earth, moons, planets, and starry suns, all seem coursing in their circles through the heavens. From the time the Hebrew sage pictured how air, water, earth, "all things are full of labor," poets and artists have alike sought to impress by the varied changes that come over the relations of objects; "all" of which "in their time" are "beautiful."[1]

In the material creation the cause of changing relation is ultimately *motion;* which Aristotle made the ground principle of his argument for the existence of a God of infinite perfection, as well as a fundamental element of truth and beauty in all created things. There are two kinds of motion; each according with its source; motion produced from without, or that of all inanimate objects; and self-motion, that which is spontaneous and from within, and belongs to all animate beings. The plant by an inherent spontaneous motion builds itself up; an animal is endowed with the additional power of physical locomotion; while man gifted with intellect, sensibility, and will, when once created by the Cause of all things, is the image of his Creator in his capacity for self-action both of body and of mind.

The primary idea in the production of motion is the element of *power;* which metaphysical theologians unite in regarding as the attribute of the Divine Being naturally suggested to the mind next after those of omnipresence or the filling of all space, and of eternity or the filling of all time. Among powers observed there are two distinct classes, *physical,* or those by which matter is acted upon by matter; and *moral,* or those by which mind acts on mind; and each of these has its sub-divisions and classes. The idea of power leads again to that of *cause;* which properly understood, implies the more

[1] Eccles. i. 4–8; iii. 11.

ultimate consideration of intelligent *purpose*. A power producing an effect beforehand designed is properly styled a cause; for though we may speak of one thing as the approximate cause of another, for instance of water turning the moving wheel as the approximate cause of the working of all the connected machinery, yet the mind looks back of anything inanimate for the ultimate as the true cause; which it finds in a *person*. The subject of changing relation, therefore, is a broad one; embracing, as it does, the field of animate and inanimate motion, of physical and moral action. In its bearing upon art it leads to the different classes of motion and emotion which may be represented, to the methods of art by which they may be presented to the eye, and to the disposition of objects in works of art best adapted to awaken the desired impression.

Motion, which in nature is real, can only be *represented* in art; except in landscape gardening. In inanimate objects motion may be in straight, but is usually in curved lines. Every planet is turned from the straight line it would by its simple impulse follow, and is bent into a curve by the attraction of other heavenly bodies; every projectile shot with the greatest attainable swiftness bends downward constantly as it goes; and there is reason for Hogarth's suggestion that the curve is the line of beauty so far as motion is concerned, since no line of motion seen by the eye is a straight one. In the mere motion of any solid object the mind seems to take delight; the infant being pleased with a stick shaken before it, the boy with the skipping of a stone or the bounding of a ball, and mature men with the whirl of machinery, the rush of a railway train, the coursing of a vessel at sea, or even with the lazy drag of a cart or a plough. The delight we take in such movements is proportioned to the regularity of the speed and the line of direction; other elements of delight not belonging to the simple idea of motion, but to other associations of the object.

The motion of *fluids* is in some respects more agreeable than that of solids. The pleasure derived from the movement of water seems heightened by the perfect ease with which the particles move upon each other; giving its stream the regular curved shape which nature and its laws impose, always a form of beauty. The swift rush of a mountain torrent, the gentle meandering of a river in lowlands, the glistening spheres of falling rain, the cylinder and cones of the upward jet, or of the falling column, these readily assumed and constantly changing forms, as well as the curve of motion itself, present a beauty of motion which solid bodies cannot equal. Even

the air moving in columns, the ever-changing forms of clouds flying, and of trees waving before the breeze, have an inspiring charm.

It is only in landscape that actual motion of machinery, of water and of air can be made available in producing the impressions made by art. Guizot has expressed doubt whether sculpture is adapted to express at all the element of action. Probably, however, a distinction should here be made between action in inanimate and animate objects. The effort to represent in marble or bronze the appearance of hair flowing, foliage swayed by the breeze, or of wheels as actually rolling, is a hazardous attempt; while the same can hardly be said of the action of animate beings. The painter is confined to still life proper, as flowers and fruits, who does not introduce the aspect of objects undergoing change, either from the action of light, of air, of water, or of earth, into his works. Motion in even inanimate things, produced by physical or mechanical causes, is certainly one of the elements of pleasure that must enter into the higher walks of art.

Coming to animate objects the representation of changing relations is, as the word well implies, the very "life" of art. Here the principle of *Design* in art has the germ of its origin; for life implies a power that is spontaneous, an action self-originated, an independent cause operating with an end in view and governed therefore by design. The elementary idea of *figure* as distinct from form, so often dwelt upon by critics in literature and art, has here its connection and consequent explanation; for implying, as its Latin derivation indicates, a *determinate* form, figure is a form that has been given to an object not by any chance acting without end or rule; but by a designing mind and hand, either Divine or human, operating of itself as an originating cause. In the same connection arises the idea of *superiority*, so much regarded by the true artist; the principle that among several objects presented in a work of art, one should be manifestly the centre of power and interest; a principle immediately associated with the preceding consideration. A tree standing alone on a rocky shore or a boat-oar lying on a sandy beach, a bear in a forest or a sheep on a lawn, Adam surrounded by groups of animals as he is naming them, each of these, because they have a higher order of *figure*, implying a more studied design, hold the position of superiority among their subordinates. In nature and in art alike the moving or movable object, that which has life or is an implement of an intelligent being, and which suggests, therefore, changing relation, is the centre of attraction.

As "life," the power of motion, has thus its connection with principles of true art, so the power of giving life, which led the Greeks to call the poet and artist *Creators*, has a still higher importance; especially the picturing of beings with life as actually moving. It is hard to conceive of a subject for a painting into which some animate being, beast, bird, or insect, would not naturally be introduced; and as in nature nothing but a barren desert is motionless, so it would ordinarily be a sterile mind that did not make any scene depicted by art instinct with some form of life. The great success of the German painters, as compared with those of Southern Europe, is the amount of motion, of life, of changing relation, they crowd upon their canvas. In Grecian sculpture, the representation of corporeal action is the very perfection of art; as is seen in the visible shrinking of modesty in the Venus de Medici, and in the advancing attitude and strain of limb in the Apollo Belvidere hurling his arrow. The very word grace, as we shall see, implies action in animate beings; as the word sublimity implies motion in inanimate objects of undefined extent, which, because of life-like movement, have personal attributes ascribed to them. As grace is an attribute of the carriage of the nobler animals, and of man or woman, when moving, so in sculpture the posture of limbs and inclination of frame that indicates motion may have the attribute of grace. As, too, nothing is more exquisitely beautiful than the miniature jet and fall of water, so the same on a grand scale, the whirling eddy with its spiral movements of the water-spout and the tornado, is perhaps the very height of the sublime.

Sect. 5. Physical Coincidence; the law of harmonious proportion between tones pleasing to the ear, and forms and colors agreeable to the eye.

As we have observed, the impressions made upon all our organs of sense have an analogy to each other more or less intimate. It is natural to anticipate that this resemblance would be strongest between the laws of address in the two higher of these organs. Though in some respects speculative, the study of physical coincidence between the impressions made by sight and sound has commended itself to the ablest minds of every age; many of whom have believed that the laws of Beauty like those of Truth may be so reached that the artist may attain to a science in the former as in the latter field. It is not poets alone that have believed in a world and an age of human advancement of which it might be said:—

"There thou shalt learn the secret power
Of harmony in tones and numbers hit
By voice or hand and varied measured verse."

The poets never would have had this suggestion had not philosophers led them to it. Ancient philosophy suggested and modern science has established that the impressions of sight coming from form and color, are produced by vibratory waves in ether, as sound is the result of similar waves in the air. Common taste among men has recognized that the proportions of a door or window are pleasing, when the length is to the breadth as two to one or as three to two; while if they be as nine to eight it is specially displeasing. Since these are the same proportions which in the length of vibrating cords produce accordant or discordant impressions, it is natural to infer that the vibrating waves in ether coming from lines that subtend different angles of vision having different breadths, may harmonize or clash like air-waves with one another. There is then a physical coincidence so far as forms are concerned between the impressions of sight and sound. Again the investigations of Sir David Brewster and others have established that the waves of light producing different color impressions are of different breadths. When in a crack in ice made by a blow the narrowest part of the aperture is black, while bands of violet, indigo, blue, green, yellow, orange, red succeed each other till the white transparence appears, it is a natural inference that the waves of ether producing these colors are of the breadth of the aperture from whose space these special colors are reflected. The waves, now, producing colors pleasing in juxtaposition are found to be of breadth kindred in their proportions to air-waves pleasantly affecting the ear. Such at least have been the conclusions of artists and art-critics in the days when art reached its highest perfection. A kindred law, as Aristotle and Sir Isaac Newton intimate, may apply to "all our senses." Thus a light and slow movement in touch produces the unpleasant sensation called "tickling;" a heavy and rapid friction, the painful impression called smarting; while the intermediate degree of lightness and quickness gives the bewitchingly agreeable sensation of fanning, laving and stroking.

We have already observed how far the Greeks went in teaching the true philosophy of the laws of sound; while at the same time they seemed to attain the climax in securing the effects of form and color. Having learned the principle of melody, as dependent on the laws of vibrations in the air which produce musical tones that are

pleasing, they not only perfected the diatonic and chromatic scales, already practically known, but, having a science for their art, they invented the enharmonic scale, and constructed musical instruments wisely adjusted to its principles. Having trained the ear to such nice discriminations, the Greeks attempted a careful analysis of harmonious proportions addressing the eye; conceiving an analogy to exist between the laws of the two organs of sense through which art specially addresses the soul. The same Pythagoras who discovered the law of inter-measurement for harmonious sounds seems to have reached a similar measure for harmonious proportions of length and breadth in objects addressing the eye; and in this common law he even believed he had found the principle of proportionate distances, weights and movements which holds the heavenly bodies in their places, and makes them move among each other in perfect harmony.

Pythagoras demonstrated the proposition that in a right angled triangle the square of the hypothenuse is equal to the sum of the squares of the other two sides; and he taught how this principle could be applied to the measurement of distances, even those of the moon and planets. In the proportionate measure always subsisting between the parts of a right angled triangle, such that if the sides are equal respectively to three and four of any given measure the hypothenuse must be five of the same measure, he thought he had discovered a law of proportion in lines beautiful to the eye in their combination analogous to that of the same proportionate measure in tones which in combination are harmonious to the ear. Pythagoras also understood the theory of the curves of the Conic Sections, especially of the circle and of the ellipse; and had discovered that the heavenly bodies, acted upon by the unknown forces which impel them, moved in these curves. In connection with this theory he argued that fire, of which the sun is the great nucleus, is the centre of the universe; that the respective distances of the heavenly bodies in our system from the sun as their centre is proportionate to the length of cords which produce the tones of the musical scale; and that therefore these Heavenly bodies as they move in their courses create a harmony which he called the "Music of the Spheres." It is hardly supposable that anything more than a high wrought figure of speech is intended by this comparison. The important point to be regarded is this; that Pythagoras was so confident that the laws of Beauty and Melody are one, that proportion and harmony in lines and tones depend on the same rule, that he even named the highest

note of the scale *neate* after the moon, the body bound to the centre by the shortest cord, and the lowest note he called *hypate*, after Saturn as the planet bound to the centre by the longest cord. The ideal Plato and practical Aristotle, alike with Pythagoras, regarded this law of proportions producing harmony as the principle ruling the entire *Cosmos* or Universe. Since it was true of the less as well as of the greater, they made it the governing guide to the architect in the dimensions of a door or column, and to the sculptor in the stature and breadth of the human figure. Thus Plato in his Republic says that "as the eyes seem to be fitted for the harmonious proportions of the celestial orbits, so the ears seem to be fitted for the harmony of musical intervals; and these seem to be sister sciences; as the Pythagoreans indeed affirm, and we must accord with them." Aristotle, when speaking of colors produced by admixture, says: "These may subsist in the same manner as musical symphonies; for like musical symphonies colors which correspond most nearly to their proportionate numbers are those which appear to be the most delightful colors." "It is for want of this skillfully adjusted proportion, that, as there are but few delightful symphonies, so there are but few delightful colors." The learned Roman Vitruvius[1] introduces this same analogy in its application to architecture in speaking of the proportions of the Ionic column, and of sound reverberators in theatres.

The idea of this law of harmony in lines and tones seems to have been revived in the mind of Galileo. We are told that music, his father's profession, and drawing, were pursuits of which in his youth Galileo was enamored. His father unwittingly had told him during his medical studies, in which he promised to be a proficient, that "drawing and music had their principles in the relations of numbers as taught in the Mathematics." The idea gave a new bent to all the young student's aspirations; his medical studies were neglected; but his parent's wishes were more than met by his son's early eminence as a Professor of Mathematics. This great and original defender of the Copernican system, who had sought the knowledge of the Mathematics for his art's sake, was carried above his own designed application; but he never ceased to love his father's art and to remember his father's idea of the law of numbers as the common law of Harmony in tones and lines.

[1] Vitruvius, Civil Architecture, Section III., Chap. 4, on Harmony; and also Section 5th.

Sir Isaac Newton, it would appear from a portion of his correspondence[1] had his attention, like his predecessors in kindred study, turned to this analogy. In a letter addressed to a gentleman whom he had encouraged to investigate this analogy, he says: "By the hands of your friend I was favored with your demonstration of the harmonic ratios from the ordinances of the 47th of Euclid. I see you have deduced from this wonderful proposition the inharmonics, as well as the coincidences of agreement; all resulting from the given lines 3, 4 and 5. You observe that the multiples hereof furnish those ratios that afford pleasure to the eye in architectural designs; that the ideas of beauty in surveying objects arises from their respective approximations to the simple constructions; and that the pleasure is more or less as the approaches are nearer to the harmonic ratios. I believe you are right; portions of circles are more or less agreeable as the segments give the idea of the perfect figure from which they are derived. Your examination of the sides of polygons with rectangles certainly quadrate with the harmonic ratios. In fine, I am inclined to believe some general laws of the Creator prevailed with respect to the agreeable or unpleasing affections of all our senses; at least the suggestion does not derogate from the wisdom or power of God, and seems highly consonant to the simplicity of the microcosm in general."

Taking up these principles of these great philosophers, Hay[2] an English artist has drawn out an elaborate system of harmonies in form; while Unger,[3] a German critic, has applied them to color. Mr. Hay's first position is "That the eye is influenced in its estimation of spaces by a simplicity of proportion similar to that which guides the ear in its appreciation of sounds." His second position is "That the eye is guided in its estimate of dimensions by direction rather than distance, by angular rather than linear proportion; just as the ear is guided by number rather than magnitude of sounds." The substance of his theory therefore is, "That a figure is pleasing to the eye in the same degree as its fundamental angles bear to each other the same proportions that the vibrations bear to one another in the common chords of music." The conclusion at which he thus

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[1] Printed in a work called "Nugæ Antiquæ" at London 1769, and quoted by Hay.

[2] Geometric Beauty of the Human Figure defined; with a System of Æsthetic Proportion. By David Ramsay Hay. Edinburgh. 1851.

[3] Die bildende Kunst. Von F. W. Unger. Gottingen. 1858.

arrives is stated in the following emphasized sentence: "Thus the eye is capable of appreciating the exact subdivision of *space* just as the ear is capable of appreciating the exact subdivision of intervals of *time;* so that the division of space into an exact number of equal parts will æsthetically affect the mind through the medium of the eye, in the same way that the division of the time of vibrations in music into an exact number of equal parts æsthetically affects the mind through the medium of the ear." Following out these principles Hay has with most elaborate comparison and collation of numerous measurements of the human frame, drawn up scales of established angles of harmony; showing also their analogy to those ruling in musical harmony. In like manner, Unger of Gottingen, tracing through the exhaustive deductions of Frauenhofer as to the breadth of waves in ether producing the impressions of the different colors, has drawn out a similar scale of harmonious proportions; showing also a kindred analogy in the proportions giving the sweetest of musical harmonies.

There is much to confirm the justness of this practical application in Art of the theory of philosophers that there is an instructive analogy between the law of Beauty in lines and Melody in tones. The two arts representative of these two departments, drawing and music, are naturally admired by the same class of minds; as was seen in young Galileo. When the one cannot be enjoyed the other takes its place; as is seen in the fact that Deaf Mutes have as instinctive a fondness for drawing as the Blind have for music. As to the suggestion that the eye is governed by angular space in its measurement, the evident analogy of the muscular sense, already alluded to, has its force in proof. As confirmation of the fact that the Greeks made this practical application of philosophy, Winckelmann argues; "It is probable that the Grecian, like the Egyptian artists had rules by which not only the greater but the smaller proportions of the body were accurately determined; and that the length, breadth, and circumference of parts suitable to each age and station were laid down with precision and taught in the writings of those artists who treated of symmetry;" and this he concludes from the oneness of these proportions generally observed by all Grecian artists. That this system of proportion was founded on the law of numbers elaborated by Pythagoras and Plato, he argues from the fact that the "human body consists of triads;" and that "three," the perfect number of Plato, is a harmonizing number, since it is "the first uneven

number, and the first number of relation; for it contains in itself the first even number, and another which unites the two together."

Not only the ideal Plato, but the practical Aristotle believed that there is a law of nature controlling the forms of plants and animals based on the principle of harmonious and proportionate numbers; and the reasonings of the "Father of Natural History," as Agassiz calls the latter, are bewitching in interest when he argues with earnest conviction, that the beautiful curves of the beet, radish, and like roots, and the similar ones of the apple, pear, pine-apple, acorn, pomegranate and like fruits, are formed after mathematical laws as rigid as those which guide the architect and the sculptor. A striking instance of this law of harmony is found in the fact observed by Gray[1], that while in the arrangement of leaves on a stalk the circumference is divided by two, three, four, five, six, and eight, which are accordant ratios, it is never divided by seven, the discordant ratio.

Sect. 6. Moral Correspondence; the harmony between objects presented and ideas represented in Art.

As art addresses the mind through the senses, the physical coincidences which affect the bodily organs are naturally considered before the moral correspondences which impress the mental sensibilities. We have seen that the changing relations which are the sources of some of the more important impressions made by art, embrace moral as well as physical action; all motion, as Aristotle argued, awakening in us an inquiry as to its cause that will not rest till we have reached a spiritual agent. As, therefore, every change implies motion, and motion a spiritual agent, and spiritual agency the action of a mind controlled in a measure by worthy or unworthy, by agreeable or disagreeable emotions, there enters into the impressions made by art the element of harmony between objects presented and ideas represented; which is a moral correspondence.

Lord Kames states an important distinction which is to be observed between the ideas of congruity and propriety. Congruity relates to fitness and appropriateness of one material object to another; as, when referring to the exhibition of the naked African chief donning the cast-off military coat of an English officer given to him, and strutting like a pea-cock in this single article of dress, we speak of the *incongruity* between the scarlet coat and the naked form of the black savage; the relation being here between two material

[1] Gray's Structural Botany, Chap. v. Sect. 1.

objects. On the other hand, questions that arise as to the moral fitness of the savage's nudity, of his habits of life as a polygamist, as a slave hunter, or as a cannibal relate to matters of *propriety*.

The Greek philosophers, as Socrates, Plato, and Aristotle, urged as the higher aim of art that it be made to correspond to true convictions of moral propriety, because of its power for good or evil on youth and men of mature age; while also they dwelt on the physical coincidences which made art a power to please. The Roman critics, as Cicero the Eclectic, Cato and Seneca the Stoics, and even Horace and Juvenal who leaned to Epicurean notions, discussed especially the moral bearings of art; urging the demand of propriety more than of congruity in works of art. Most of the numerous references to art of Cicero in his "Duties," of Horace in his "Poetic Art," and of Seneca in his "Morals," are of this character. As might be anticipated, the allusions to art which fill the revelations of the Old and New Testament Scriptures, relate to its moral proprieties as a power for good. These allusions abound in the pages of Moses the Hebrew Lawgiver, of Solomon the Hebrew Moralist, of Isaiah, Ezekiel, and Daniel the Hebrew Seers; as well as in the letters of Paul the apostle of the Christian faith to European, and of John to Oriental races.

The subject of moral correspondence has a bearing on the analysis of the mental capacities and faculties, as including those of the intellect, the sensibilities and the will; since all art implies in its *design* a purpose of the will, in the *ends* sought by that purpose an address to any one or more of man's varied sensibilities, and in the *means* for securing the ends sought the employ of judgment, imagination and other intellectual faculties. It is only a legitimate employ by the artist of all these powers of mind, and that in their healthful condition, which can secure congruity and propriety in his works. In studying the moral aspects of Art and of its appeals, regard must be paid to the laws of association on which all acts of memory, judgment and imagination are dependent; as the association of ideas by resemblance or contrast, by contiguity of time or place, and by the relation of cause and effect, when either physical or spiritual agencies are concerned.

The applications, therefore, of this principle of moral correspondence in art are varied and numerous. Moral propriety demands truth in position; requiring ease and security in the attitude of men represented as swaying to and fro under excited feeling; a principle attained only gradually in the early stages of the revival of art in

Italy. Moral propriety requires truth in respect to time; censuring anachronisms; a principle which the secluded lives, and especially the reverence for ecclesiastical precedents common to Italian artists of the best age has led them to overlook in the dress, attendants and other accessories introduced into their representations of the life of Christ. Both congruity and propriety, not to mention other moral convictions, are opposed to that mutilation and transportation of fragments of works of art which causes those exquisitely wrought gems to be viewed out of their proper position; a principle sensibly impressed upon the visitor to the detached and fragmentary specimens of bas-reliefs wrested from the cornices of Egyptian and Grecian temples, and gathered in the London and Paris collections of art; a principle which is still more deeply felt when the traveler's eye rests on the voids in the original structures, lonely and voiceless on their native soil, from whose walls have been cut and pried out the select portions of those masterpieces of ancient art. Congruity and propriety, too, are the essential elements of separate excellences, such as that of grace, in works of art. While, for instance, there is the rarest grace in a weary Hercules leaning on his club, in an exhausted dancing girl resting on her seat, and in a panting warrior reclining at full length on the ground, nothing could be more the opposite of true grace than the attitude of a belle or courtier lounging in ill-disguised ennui; and if we ask for the ground of this difference, we find it in the principle of moral propriety.

CHAPTER V.

THE FACULTIES OF THE HUMAN MIND AS AFFECTED BY ART.

In all human impressions two things are to be regarded; the mind on which the impression is made and the object without the mind which makes the impression. The external object and the senses through which it is perceived, have, as was natural, been first considered; for it is the outward that first absorbs the thought not only of the child but of the mature man in the practical business of life. It is an afterthought which leads the comprehensive student and master in any department to bend back in reflection the mind's thought upon itself and to analyze the nature of its own impressions

in themselves, and also of the thinking power which experiences these impressions.

Without this consideration of the power itself which he employs, the practical artist may use with a large share of success his mental faculties in designing and executing works of art. Without it, however, the philosophic student of art, not himself a practical artist, can gain no consistent knowledge in this or any other department of study; while moreover the artist himself may add indefinitely to the skill with which he can wield his powers, when like the master in the mechanic arts he can from knowledge of their nature mould and adapt the instruments with which he works. This Plato, ignorant of the practice but master of the theory of art, intimated in the inquiry, "Indeed then do those men seem to you to differ from blind men who in reality are destitute of theoretic knowledge; who neither have in their own souls a distinct ideal, nor like painters looking above themselves to the true ideal, always referring their own conceptions to it and contemplating it with the greatest accuracy possible, are enabled, in this department as in those others, to establish just rules of the beautiful, as of the right and of the good?"

When this consideration is attempted a careful discrimination will lead the mind to remark and to trace out these natural divisions in the field of his contemplation. The mind will fix itself now upon the impression in itself considered; then upon the power of the mind which either receives the impression from an object presented, or forms for itself a conception of an object when none is before it. Again turning aside from the consideration of the impression separated from the object producing it, it will dwell on it in connection with different elements and aspects of the object, and will trace its features in other objects; when yet again turning back to review its own exercises it will ask how these several modifications of the general impression are arrived at. Finally, since there is so universal agreement among men as to the general impression of beauty, and yet great differences as to both the strength and the character of the special impressions made by varied individual objects on different minds, the nature and the source of both this agreement and of this difference will be sought. The general impression produced on the human mind by works of art is entitled "Beauty;" and the power of the mind both to appreciate and to create objects of beauty is styled "Taste." Each of these is first considered in itself as separated from its object, or in the *abstract;* each is next considered in connection with its object, or in the *concrete;* while the comparative strength

both of the power and of its impression in different beings and classes of men is naturally suggested as a concluding inquiry.

Sect. 1. Beauty in the Abstract; or the nature of our idea of the Beautiful.

As to the essential nature of our Idea of the Beautiful there has been far greater unanimity than would be apparent to one failing to discriminate between beauty in the abstract and beauty in the concrete. Even upon the latter point of consideration opinions discordant at first view assume a degree of harmony when principles maintained by differing theorists are put into their legitimate connections.

The distinction between the four elementary principles of human apprehension, the True, the Beautiful, the Good, the Right, has been recognized by leading philosophers in all ages and of the most opposite schools. By Plato and Aristotle the specific meaning of these words is constantly urged; Cousin in modern times has ably analyzed the true, the beautiful, and the good; Wayland has given a masterly clearness to the distinctive element of the right; and the agreement of so many logical thinkers must have attained to comparative correctness of view. Yet more, the Divine Teacher and his inspired apostles have in their careful use of the Greek tongue, and guided by perfect knowledge of man's nature, most fully discriminated these four elements; often referring to each separately; and sometimes carefully contrasting two or more of them. Paul, the learned "apostle to the nations," using the distinctive words of Plato's Metaphysics and Aristotle's Ethics with peculiar precision, is most instructive to the careful student.[1]

The distinct meaning of the terms true, beautiful, good and right may be clearly illustrated by a simple example. If any one beholding the form of an apple on a mantle should say, "that is a *true* apple," he would be understood as referring to the essence or sub-

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[1] Among numerous instances "the true" is distinguished, John viii. 32; xviii. 37; Rom. i. 25; ii. 2; iii. 4; 1 John ii. 8; v. 20; "the beautiful" generally rendered "good" or "goodly," Matt. v. 16; xii. 33; xiii. 45; John x. 11; Rom. vii. 18, 21; xii. 17; Gal. iv. 18; Tit. iii. 8; "the good," Matt. xii. 35; xix. 16, 17; Rom. vii. 13; 1 Pet. iii. 13; 3 John 11; "the right," Matt. i. 19; x. 41; Luke xii. 57; John v. 30; Rom. iii. 26; Eph. vi. 1; 1 Tim. i. 9. These elements are contrasted; the true and right, Phil. iv. 8; Rev. xvi. 7; xix. 2; the beautiful and good, Matt. vii. 17, 18; Rom. vii. 16, 18; the good and the right, Rom. v. 7; vii. 12· Tit. i. 8; 1 John iii. 7; and the beautiful, good and right, Rom. vii. 12—18

stance of the apple; as the juicy pulp constituting the real fruit, in opposition to a fictitious representation of it in wax or marble. If he should say, "that is a beautiful apple," he would as certainly be regarded as referring to the form and color as conveying a pleasant impression; an idea, entirely aside from any consideration, as to the material of which it is composed. If again he should say "that it is a good apple," he would as manifestly refer to the *adaptation* of the real or fictitious fruit; the one as a *true* apple to give pleasure by its substance to the palate and health to the digestive organs, and the other to give pleasure as *beautiful* by its form and color addressing the eye, and through it the mind. If he should say, yet again, "that is a *right* apple," every hearer would feel that violence was done to the common meaning of language. The principle of right does not respect the essence of the apple as true, its form as beautiful, nor its adaptation as good; it can only be ascribed to an emotion, desire, or act which a human being may exercise in reference to the apple as possessing either of these qualities. This general distinction of these four elementary conceptions is of universal application; as when of a mental or moral quality or exercise, we say, "that was a true, a beautiful, a good act."

The irrationality of the inquiry "What is beauty?" was often and admirably illustrated by Socrates, as Plato has recorded in his Dialogues; as the similar inquiry "What is truth?" was one to which no reply was expected, when proposed to the Divine Teacher by the Roman Governor at Jerusalem. Sir Wm. Hamilton's clear analysis of the nature of an axiom is applicable to any attempt to define the elementary principles of human apprehension and conception; they are in themselves the simplest form of expression that can be used to embody an idea, and of course no simpler words can be found by which to explain them. If an attempt be made to define an axiom, it can only be said that an axiom is a proposition self-evident, or one containing in its own statement its evidence. If any reply be given to the questions, "What is truth, beauty, goodness, and right," it can only be stated; truth is that which in the *essence* of a thing corresponds with the convictions of our understanding; beauty is that which in the *qualities* of an object affords pleasure to our sensibilities; goodness is that in the *relation* of one thing to another, which secures the welfare, or promotes the interest of the latter; and right is that in the *act* of an intelligent being which corresponds with our conviction of the responsibility of one moral being to another. If these attempts at definition seem inadequate

it must be remembered that there is the same difficulty in defining by simpler language any abstract term; as the words white or round, equality or justice.

As the inquiry, "What is beauty," is manifestly superfluous, so the question "Why is any object beautiful," is in one sense, irrational; since one of the characteristics of an axiom is that it is "incomprehensible;" or, a conviction for which no fact, supposed to be a reason, can be found back of the conviction itself. When asked why I believe that an object which I see exists, that two lines cannot enclose space, that every effect has an adequate cause, I can only say that I am so made that I cannot believe the contrary. So when having been asked "why I regard an apple beautiful," and having mentioned the lines in its form, and the tints of its color, which give me the impression of beauty, if it be farther asked, "why I regard such lines and such tints beautiful," I can only say that I am so made that I cannot but so regard them. When the question of beauty has regard to certain individual forms, or to particular features of those forms, differing views may be entertained; as will be observed in considering beauty in the concrete. As to the essential principles, however, which relate to the nature of beauty in the abstract, the thought of mankind has been remarkably coincident.

Plato is the earliest Grecian philosopher from whom reasonings upon the nature of beauty in the abstract have come down to later generations; for, the recorded teachings of earlier philosophers relate to beauty in the concrete. Plato reproduces repeated and long conversations between Socrates and his contemporaries on the nature of the beautiful; his antagonists constantly citing some object which is beautiful, or some one of many elements essential to beauty; while he, with sagacity, shows that their definition is but a partial one, and applicable only to concrete forms, not to the abstract quality of beauty. The distinction between an abstract and concrete idea is thus illustrated. After mentioning that Right, Goodness, Honor, Magnitude, Strength, Health, "are all abstract things," he adds; "We speak of things as equal, or unequal. We not only see one stick as equal to another stick, and one stone as equal to another stone, but, besides, we think of equality in itself, as separate and real. Now where do we acquire this knowledge? Not from the sticks or stones; for these are strictly equal. Equality is not the same as equal things. But yet from seeing equal things we think of equality." So he argues, beauty is separate from beautiful things; and of beauty in itself, he says: "the beautiful is difficult to define;"

meaning that it is undefinable. Aristotle, and the writers of his school, confine their statements to beauty in the concrete. Roman writers, however, teach the universal common impression as to truth and beauty in the abstract. Thus Lucan, the Roman poet, says: "The idea of beauty is the same among nations in their decline and in their infancy." Augustine, the clear-thinking Christian philosopher, says: "If we both *see* that to be true which *you* say is true, and both see that to be true which *I* say is true, *where*, I ask, do we see it? Neither do I see it in you, nor you in me; but both in that which is above our minds, in the unchangeable verity itself."

While thus the ancients seem so agreed in their convictions that the idea of beauty, like that of truth and all other abstract conceptions, is an intuitive and instinctive conviction, the reasoning of modern writers, such as Locke, Kames, Reid, Burke, Alison and others in England, of Kant in Germany, and of Cousin in France, might be quoted at length substantially to the same point; even Jeffrey, the Scotch Reviewer, though designing to argue the contrary, showing a recognition of the same principle. The popular modern art-critic, Ruskin, without any attempt at logical statement, presents well the justly received view as to the nature of our idea of beauty. "Why some forms and colors are beautiful is as unknown as why sugar is sweet, and wormwood is bitter." Alluding then to the fact that our Creator has made men with a common impression of beauty, he adds, "We may, indeed, perceive as far as we are acquainted with His nature, that we have been so constructed as when in a healthy and cultivated state of mind, to derive pleasure from whatever things are illustrative of that nature; but we do not receive pleasure from them because they are illustrative of it, but instinctively and necessarily; as we derive sensual pleasure from the scent of a rose."

Sect. 2. Taste; or the Power of the Mind which gives origin to the idea of the Beautiful.

It is natural to suppose that each distinct conception and act of the mind originates in a distinct faculty. As we designate by different names the members and organs of the body which fill different offices and perform different services, distinguishing the feet that carry us and the hands that labor for us, the eye that sees and the ear that hears, so we naturally and properly give the name memory to the faculty which recals what has already been before the mind, judgment to that which decides as to the character of what is now

present in the mind, and imagination to that which embodies new images to bring forward for its contemplation.

Since the four conceptions of the true, the beautiful, the good and the right, seem to be elementary and distinct from each other in their nature, it is natural to refer them to powers of the mind distinct in name; though the mind, like the body, may be one, both in essence and in concert of action. From the earliest known records of human thought and expression in every language, a name has been given to that power by which man, as distinct from every animal, recognizes abstract truth. That name in the English tongue is best expressed by the word *reason;* for if any one were asked why he believed in any particular truth, as for instance, "that two things equal to a third are equal to each other," we would reply, "because my *reason* assures me so;" as instinctively referring that conviction to this power of the mind as he would refer sight to his eye. So the fourth of the elementary ideas here considered is as naturally referred to a distinct faculty of the mind called the *conscience;* this term designating the power by which we recognize a moral element associated with, yet distinct from the knowledge proper taught by reason. Its existence and nature has been so uniformly, as well as universally recognized, that it has its cognate synonym in the Greek; while it is itself a word borrowed by modern European tongues from the Latin.[1] From Plato to Kant, and from Cicero to Wayland, nothing in the range of metaphysical statement has been made clearer than the distinct nature and office of these two powers of the mind; which have been properly called *faculties,* because they not only receive impressions as passive capacities, but exercise a controlling and moving influence as active powers.

The third of the ideas mentioned, the good has not been referred ordinarily to any distinctly mentioned faculty. Yet there has always been recognized, prominent in man and in animals, a faculty which with great care has been distinguished from reason; while at the same time it has been seen to be a guide in practical matters, so perfect, that some have without due thought declared it superior to reason. That faculty, or power of the mind, is called "Instinct;" which leads to the good, or to the adaptations of things to their ends. Thus we say that the bee, and the bird, and the beaver, are guided by instinct in building their habitations; this power directing

[1] The words *eidesis* and *suneidesis* in Greek are cognate to *scientia* and *conscientia* in Latin.

them to adaptations more perfect than human skill can attain, while no ray of reason suggests to them any principle of truth. So we say that man is guided by instinct when without thought he flies from, or breasts himself against sudden danger; instinct manifestly guiding him to the good, and as manifestly not to the true.

To the power by which the mind apprehends the second of these ideas, the *beautiful*, modern, popular language, as well as modern philosophy, has consecrated the word "Taste." It is a designation borrowed from that one of the human senses which, as we have seen, is grossly and thoroughly corporeal; and when thus transferred to the highest field in which the material and spiritual unite to afford man impressions of delight, the word refers both to the active discrimination which the mind exerts in searching out what is in itself beautiful, and also to the sensible impressions of pleasure arising from the appeals of beauty, to the mind. As intimated, this special appropriation of this term to designate a mental impression, is modern; yet in most ancient times, and in tongues most diverse the same figure of speech, borrowed from the same corporeal sense and transferred to one or another of the four fields of conception we are considering, was in popular use. Thus the ancient Asiatic patriarch, speaking in the cognate Hebrew-Arabic of his age and land, employs this figurative allusion to express the power of the mind in discerning first the right, and then the true; asking at one time, "Is there iniquity in my tongue? Cannot my taste discern perverse things?" and again inquiring, "Doth not the ear try words, even as the mouth tastes its meat?"[1] In the Greek and Latin tongues also, a similar tropical signification was given to the word meaning taste, by such writers as Sophocles and Pindar, Cicero and Quinctilian; Sophocles speaking of "testing a truth by the tongue;" Pindar of tasting the sweets of song; Cicero of the taste for literary studies, and Quinctilian of the rhetorical "taste of the city." From those ancient tongues the same word used in the same figurative signification has passed to their modern successors, as the Italian and the French. With the ancients, however, it was but a figure of speech, not an appropriated name for a mental power when the word taste was employed to illustrate the universality, the instantaneousness and the accuracy with which the common mind recognizes the true, the beautiful, the good, and the right.

Plato, when using terms philosophically, selects the general desig-

[1] Job vi. 30, and xii. 11.

nation "Intellect," or the more specific word "Reason," to present his view of the power by which abstract ideas in all the four departments referred to are apprehended. In his early Dialogues, as in the Republic, for instance, he reasons: "As to the beautiful and the good in existing objects, we say, indeed, that they are seen by the eye, and are not objects of intellectual perception; but we also say, that the ideas themselves of beauty and goodness are perceived by the intellect and are not seen by the eye." In his Banquet, written later in life, alluding to his favorite opinion that man's reason is so exalted above his earthly nature, that it must have existed in a previous higher world, an opinion, however, which has no necessary relation to the power of the mind as exercised on earth, Plato thus argues: "It is by having seen the True, that man resumes the human form in the higher life. To this end men must understand general propositions; which by Reason are collected in our ideas from many sensations." "The soul, in the exercise of Reason, recals the reality of Beauty which it has seen in its supernal travels." It did not come within the province of Aristotle and of other practical philosophers to give a metaphysical analysis of the intuitive powers of human reason; nor did Plato enter into the minute distinctions made by modern thinkers and writers on this subject. The Christian Augustine, however, went far in this analysis.

About the middle of the eighteenth century, Reid, the Scotch metaphysician, followed by Kames, Burke and Alison, fixed the use of the English word "Taste" to designate the power by which the mind recognizes beauty; while Kant, the German philosopher, brought into use the more classic name *æsthetic* sense or judgment. Of the two theories then for a long time discussed Alison gives the following statement. "The first class is that which resolves the emotion of taste into an original law of our nature; which supposes a sense or senses, by which the qualities of beauty and sublimity are perceived and felt as their appropriate objects; and concludes therefore that the genuine object of the arts of taste is to discover and to imitate those qualities in every subject which the prescription of nature has thus made essentially either beautiful or sublime. To this first class of hypotheses belong almost all the theories of music, of architecture and of sculpture; the theory of Mr. Hogarth, of the Abbe Winckelmann, and perhaps, in its last result, also the theory of Sir Joshua Reynolds. It is the species of hypothesis which is naturally resorted to by all artists and amateurs; by those whose habits of thought lead them to attend more to the causes of their emotions

than to the nature of the emotions themselves. The second class of hypotheses arises from the opposite view of the subject. It is that which resists the idea of any new or peculiar sense distinct from the common principles of our nature; which supposes some one known and common affection of mind to be the foundation of all the emotions we receive from the objects of taste, and which resolves, therefore, all the various phenomena into some more general law of our intellectual or moral constitution. Of this kind are the hypothesis of M. Diderot, who attributes all our emotions of this kind to the perception of relation; of Mr. Hume, who resolves them into our sense of utility; and of the venerable St. Austin, who, with nobler views, a thousand years ago resolved them into the pleasure which belongs to the perception of order and design. It is the species of hypothesis most natural to retired and philosophic minds; to those whose habits have led them to attend more to the nature of the emotions they felt than to the causes which produced them." In this classification more of harmony between apparent opposites would appear if the distinction were more remarked between abstract and concrete beauty, and of the varied and different powers of the mind through which their impressions are received. Metaphysical thinkers have generally discriminated between powers, which, though of course parts of the one indivisible mind, are in the results of their operations as distinct as different classes of muscles, nerves, and organs in the human body.

As to the distinctive character of Taste as an intuitive power of the mind recognizing beauty, the following brief statements may serve as an illustration. Reid says, "The sense of beauty may be analyzed in a manner very similar to the sense of sweetness. It is an agreeable feeling or emotion accompanied with an opinion or judgment of some excellence in the object which is fitted by nature to produce that feeling." Blair says, "Taste is ultimately founded on an internal sense of beauty, which is natural to men, and which in its application to particular objects is capable of being guided and enlightened by reason." Burke's statement is, "I mean by the word Taste no more than that faculty or those faculties of the mind which are affected with, or which form a judgment of the works of imagination and the elegant arts." While the writers just quoted, with careful discrimination point out the two-fold character of taste as an impressible sensibility receiving emotions from objects of beauty, and also as a discerning faculty deciding upon the merits of an object of beauty, other authors of ability make taste only a sensibility, and

imagination the active faculty of intellection. Alison's statement is, "In every operation of taste there are two different faculties employed, namely, some affection or emotion raised, and the imagination excited to a train of thought corresponding to this emotion." Cousin says, "Taste is not a simple faculty; it is a happy combination of the three faculties which serve for the perception and the reproduction of the beautiful, judgment, sentiment, and imagination." Wayland again remarks, "Taste is that mental sensibility by which we recognize the beauties and deformities of nature and art." "It is a sensibility rather than a faculty. A faculty is the power of doing something." "Imagination is the faculty by which we combine; taste is the sensibility by which we feel. Imagination forms pictures; taste determines whether or not a certain quality exists in them after they are formed." Alison's statement takes shape from his efforts to expose the errors of a theory to which he was opposed; and Cousin's from his aspiring after an eclecticism which should do credit to both theories. The very language of both these writers, and yet more of Wayland, shows their recognition of taste as a positive *intellectual power*, which "recognizes" and "determines." The characteristics of taste as a power of the mind are as distinct as those of Reason and Conscience developed by Cousin and Wayland. The imagination forms and combines conceptions, not deciding on either their truth, their beauty, or their moral character. It is Reason that decides upon their truth, Taste upon their beauty, and Conscience upon their moral character. No element of that which constitutes a power or faculty and which makes Reason and Conscience to be regarded as mental faculties is wanting in Taste. This in a popular mode of statement is admirably recognized by Ruskin; who, after arguing that taste is a power of the mind distinct from judgment which decides as to truth and that power unnamed which recognizes fitness, he says of taste, "It is the instinctive and instant preferring of one material object to another without any obvious reason except that it is proper to human nature in its perfection to do so"

Sect. 3. Beauty in the Concrete; or the elements in objects which give the impression of beauty.

It is in the concrete that beauty is seen by the ordinary eye; it is only the mind of superior thought that realizes and relishes the conceptions of abstract beauty. All language for abstract ideas is primarily drawn from the field of the concrete; and words expressive of spiritual ideas are those which are primarily applicable to

material objects. We must speak even of the Supreme Spirit as having eyes, ears, and hands, in order to convey any conception of his wisdom, knowledge, and power. So, too, the words which will express the ground of our impression that any object is beautiful must be borrowed from concrete conceptions. It was certainly natural when Socrates asked, "What is beauty?" that his interlocutors should constantly make the mistake in reply of citing some beautiful object, as a blooming girl, or a master-piece of statuary to express their conception. Hence, also, we use comparisons to illustrate our ideas; saying, "it was as beautiful as a rose; she was as fair as a lily, and as graceful as a gazelle."

When, however, any object gives us in the concrete the impression of beauty, we instinctively inquire for ourselves, and expect others to ask, "Why" we regard it as beautiful; thus showing that there are principles of beauty, elements of the beautiful in objects which we may abstract from the object in which they are found. Thus, if a diamond and a pebble were brought before a company of men, women, and children, in any age, or under any degree of cultivation, all would admire the diamond as beautiful above the pebble; and in giving their reasons for their admiration would refer to the straight lines and fixed angles constituting its regular form, and to its brilliant reflection of light. If again, a rose and a rush were presented to the same company, they would instinctively agree that the rose was beautiful; and would all refer to the curved lines of its contour so different from those of the diamond, and to the new element of color, the white or red set off by its back ground of green. If again, a spirited saddle-horse were made to pass before any number of people by the side of a pack-mule, the same attributes of form and color would be quoted as elements of beauty, with the additional quality of grace in motion. Yet once again, if a lovely young female were introduced, the three classes of qualities already mentioned would still be referred to, with the additional element of expression in the eye and other features revealing traits of intellectual and moral character. In each of these successive examples some new element enters in to make up what in each instance we designate by the general name beauty; and abstracting the several elements in each case we can look for their counterpart elsewhere in nature, or seek to reproduce them in art.

As already observed, most of the ancient Greek writers on beauty, Plato excepted, satisfy themselves with referring to objects of beauty in the concrete; and their definitions should not, therefore, be con-

founded with Plato's discussion, put into the mouth of Socrates, as to beauty in the abstract. Thus Thales, the earliest Greek philosopher, says: "The most beautiful existence is the *cosmos*," or universe; "for it is a work of the Deity's art," and in later times this Greek word *cosmos* came to have the abstract meanings of *order* the cause, and of *beauty* the effect, as well as the concrete meaning of the *universe*, the object in which both cause and effect are recognized. Pythagoras taught that beauty is "unity in variety, and harmony in opposite qualities." Commencing with Pythagoras, first among Greek critics, an analysis of the elements of beauty more or less distinct may be traced; and for the understanding of their apparently conflicting views attention is requisite to these two principles. In the first place, beauty is universally recognized among men as a quality in objects entirely distinct from both truth and goodness; and among its elements are those of form, color, motion and relation. In the second place, though truth and goodness are not themselves beauty, nor fundamental elements of it, yet they are indispensable associate principles. Hence, no painting, for instance, of a horse, can be beautiful unless *true to nature;* that is unless it presents his real form and color as found in nature. Hence, again, no work of art can in the highest sense be beautiful, unless also it is *good.* This attribute in its lowest form is the *useful;* a plough, which is useful, being for that reason beautiful to the farmer. The highest expression of the good is in the *suitable;* which embraces the idea of the true as well as the beautiful, and is illustrated in the fact, that even a deformed man appears beautiful when his character comes to be admired. These principles recognized, but not always kept distinct by ancient and modern writers, if held clearly and constantly in mind, will greatly aid to just views of beauty in the concrete.

Plato recognizes four classes of concrete beauty: first, that of corporeal existences; second, that of spiritual attributes in individual character; third, that of laws and science in the physical and intellectual worlds; fourth, absolute beauty as it exists in the perfect being who is the author of all inferior existences. Socrates, when he had asked "What is *the beautiful?*" and had received the reply that "a *fair* maiden is beautiful," asks "why then did not Phidias make his Minerva thus *fair;* all gold instead of the flesh ivory, the robe gold, and the eyes precious stones." Receiving again the reply that these materials are beautiful when "suitable to their use," he asks again, if a wooden spoon is more beautiful than a gold one, because it is more useful. In these examples the good is made distinct from,

yet an accompaniment essential to the beautiful. Again having obtained two disconnected admissions that purple is the most beautiful color, and the eye is the most beautiful part of the body, he asks, "why then do not painters add beauty to the eyes by painting them purple;" and having kept his weak antagonist perplexed awhile he exclaims, "Wonderful critic! you do not imagine, do you, that in order to make the eyes more beautiful we should paint them so that they would not appear to be eyes?" Thus again, he recognizes that though *truth* is not beauty, yet no object destitute of truth can be beautiful. Again, he thus distinguishes concrete from abstract beauty. "Things which please us through sight and hearing call attention to the *circumstances* attending the idea, not to the *principle* of beauty." The special qualities which united produce the impression of beauty are graphically pictured as meeting in Cupid; "Love is . . . the most blessed of the gods; at once the most beautiful and the best." "He is very young and very delicate; and in addition to these qualities, he is of a most flexible form; otherwise he would not be able to entwine himself around every form." "Another great proof that his form excels in symmetry and flexibility is found in its gracefulness; which excellence Love confessedly possesses in a manner superior to all beings." "His diet, too, on flowers points out the beauty of his color." The essential principle of *ideal* beauty Plato finds in "proportion and symmetry," when they exist in "*perfection;*" since "nothing incomplete can ever be beautiful." He cites as an example Zeuxis' celebrated picture of Helen; in which the artist sought to combine in a perfect ideal the excellences of form and color which he had gathered by observing many fair women and uniting their select beauties in one being. He finds also the same elementary principles in the true and the good; and hence he illustrates the indispensableness of their association. "The true," he says, "is allied with proportion, not with disproportion;" the true rose or horse is the perfectly proportioned one. Again, he says, "Men are wont to regard the beautiful as the good; though, in fact, in the beautiful they only love the good." The power of simple goodness to give the impression of beauty is admirably illustrated by a fancied or real conversation between Socrates, whose ugliness of form has passed into a proverb, and Alcibiades, who was a paragon of manly beauty. Alcibiades having said to Socrates that in personal appearance he seemed to him like "the figures of Silenus," noted for his flabby and beast-like grossness; and, indeed, like "to the satyr Marsyas," the eminent flute-player, characterized by his

grimaces in blowing his instrument; having then added, "That in your outward appearance, Socrates, you resemble those beings, you yourself will not deny;" and finally having dwelt on the fact, that in spite of his ugly aspect, he was irresistibly drawn to him and even admired his features, Socrates recognizes this as illustrating his own principle of beauty; and exclaims, "What is that matchless beauty you could see in me so vastly superior to your own fine form?" This early teaching of the Greek philosopher in the age of the perfection of Grecian art, may prepare us for the proper consideration of the views urged by modern artists and art critics, that beauty is essentially distinct from truth and goodness, having its own special laws of excellence; while at the same time, the artist never can reach beauty without careful study of the real and true as he sees them in nature, nor unless he seeks the useful, or at least the suitable as an attribute associated with the truly beautiful.

Passing over the kindred statements of Aristotle, the practical philosopher of Greece as opposed to the ideal Plato, and also of Cicero the Roman eclectic who drew from both, and observing that beauty in the concrete is the special aim of their research, we do well to notice more particularly the views of several modern critics. The early master in English painting, Hogarth, wrote a treatise which he styled the "Analysis of Beauty;" on whose title page as the symbol of his theory he inscribed a triangle, within which he drew a serpent in the waving line which his body takes when moving. In his Introduction, he dwells on the opinion that writers on the principles of beauty are generally theoretic men, who fall into the discussion of *moral* instead of *physical* elements constituting beauty. His own idea of the latter, he says, is borrowed from Michel Angelo's maxim for his pupils, that figures should always be made "pyramidal, serpentine, and with a ratio of increase by one, two and three." This maxim he states so influenced Raphael's method when he became acquainted with M. Angelo that he "changed his straight and stiff manner, and became so fond of the serpentine line that he carried it into a ridiculous excess, particularly in his draperies." This maxim M. Angelo himself had borrowed from Aristotle's suggestion that "flame, pyramidal in form and serpent-like in its motion, is most indicative of life and symbolic of spirit." Hogarth thinks that he finds the influence of this principle in the waving lines introduced into Grecian and especially Roman architectural ornament and decorative art; while in the group of Laocoon the two sons at the side of the father are made of natural size, and the central figure

colossal, so as to make the whole come within the triangle or pyramid. He distinguishes the waving, serpentine and spiral lines as divisions of his general theory; giving numerous instances in vegetable, animal, and human forms illustrative of these curves. A large portion of Hogarth's work is filled up with the consideration of the principles usually discussed by writers on Beauty as entering into its elements; as fitness, variety, uniformity, simplicity, intricacy and quantity; to all of which he gives such a turn as to make them seem to favor his theory. Hogarth has the frankness to acknowledge that the universally admired straight line of the Grecian profile seems an exception to his theory; but he omits to allude to the fact that the straight line, and that unbroken, was the Grecian ideal of the line of architectural beauty also. Of course it is beauty in the concrete, not in the abstract, that is before Hogarth's mind in the study of his theory.

The admirable critic Beattie, finds the chief elements of beauty to reside in form, color and expression; united with the moral idea of suitableness, or fitness. Thus he says, "Colors are beautiful, *first* when they convey to the mind a lively sensation, as white and red; *second*, when they cherish the organ of vision as green; *third*, when they have that character which we term delicacy, and yield a sensation both lively and gentle, as pale red and light blue. But, *fourth*, the beauty of color depends chiefly on the agreeableness of the ideas it conveys to the mind. The verdure of the fields, for instance, is delightful because it leads us to think of fruitfulness, fragrance, and many other pleasant things; but greenness in the human face would be horrible because it would suggest the notion of pain, of disease, and of something unnatural." Again he says, "That which in the smallest compass exhibits the greatest variety of beauty is a fine human face. The features are of various sizes and forms; the corresponding ones are exactly uniform; and each has that shape, size, position, and proportion which is most convenient. Here, too, is the greatest beauty of colors, which are blended, varied and disposed with marvellous delicacy. But the chief beauty of the countenance arises from its expression."

Lord Kames, a critic of the greatest acuteness, divides beauty into two species, intrinsic and relative. Relative beauty depends not on what the thing is in itself, but on its relations to other things, its associations, its utility, and its propriety. "Intrinsic beauty," he says, "must be analyzed into its constituent parts. If a tree be beautiful by means of its color, its figure, its size, its motion, it is in

reality possessed of so many different beauties, which ought to be examined separately, in order to have a clear notion of them when combined. The beauty of color is too familiar to need explanation." "The beauty of figure, arising from various circumstances and different views, is more complex; for example, viewing any body as a whole the beauty of its figure arises from regularity and simplicity; viewing the parts with relation to each other, uniformity, proportion and order contribute to its beauty. The beauty of motion deserves a chapter by itself." The more elaborate Reid in presenting his analysis of beauty, says, "Our sense of beauty is resolvable into instinctive and rational, and beauty itself into original and derived." These he further analyzes thus: "The qualities of inanimate matter in which we perceive beauty are sound, color, form, and motion; the first an object of hearing, the others of sight." "All that can be called beauty in the human species may be reduced to these four heads; color, form, expression, and grace. The two former may be called the body, the two latter the soul of beauty."

The thoughtful reader of Burke on the "Sublime and Beautiful" is surprised at the low view taken in his section on "Beauty" in itself considered. It is but a continuation of his consideration of the final cause originating the difference in the sexes; the "mixed passion," he says, "which we call love, is the *beauty* of the *sex*. Men are carried to the sex in general, as it is the sex, and by the common law of nature; but they are attached to particulars by personal *beauty*. I call beauty a social quality." This confusion of ideas in the great scholar-statesman, always heavy as a thinker and speaker, never acute in metaphysical analysis, though massive in practical logic, illustrates the fact that a general critic may not only fail to discriminate between beauty in the abstract and beauty in the concrete, but even between the impression itself of beauty and other emotions entirely distinct from it. The same confusion of ideas, amid many valuable suggestions, is found in his discussion of the elements of beauty in the concrete; in which it is first argued that neither proportion, nor fitness, nor perfection is the cause of beauty; that nevertheless "beauty is some quality in bodies acting mechanically upon the human mind by the intervention of the senses;" among which qualities smallness, smoothness, gradual variation, delicacy and color are named.

Alison who devoted his pages as a critic to the exclusive consideration of the Subject of Taste ably argues that the beauty both of color and form arises mainly from our associations connected with

them. Colors possessed of one or the other of these three characteristics appear beautiful; "*first*, such as arise from the nature of the objects thus permanently colored," as green in grass; "*second*, such as arise from some analogy between certain colors and dispositions of mind," as white for bridal dresses; "*third*, such as arise from accidental connections whether national or particular," as purple in every land for a royal robe, and scarlet in England for soldier's uniform. Forms, he argues, as truly as colors, are dependent on the same law of natural, moral or accidental association for the pleasure they give; his statement being, "the sublimity or beauty of forms arises altogether from the associations we connect with them, or the qualities of which they are expressive to us." In illustration of the law of natural association as constituting beauty, he cites the language of common men who when describing beauty in landscape speak of "gentle swells" in its surface and of its vegetable and animal accompaniments. This he thinks constitutes the beauty of wreath decorations; in which foliage and flower are beautiful only when the material seems adequate; delicacy in marble, for instance, being a blemish unless cut in low relief, so that it seems firm as well as delicate; while also the serpentine curve, specially expressive of delicacy, is a blemish when, as in the rose stem, strength and erectness seem to be naturally requisite. It will be observed at once that Alison here but recalls Plato's idea of the necessary *union* of the *true* and the *good* in that which is beautiful; an idea which artists in every cultured age have embodied in the watchword, "Be true to nature." Akenside the poet, in his 'Pleasures of the Imagination," anticipated Alison in this statement:—

> "Thus was Beauty sent from heaven,
> The lovely ministress of Truth and Good
> In this dark world; for Truth and Good are one,
> And Beauty dwells in them, and they in her,
> With like participation."

The chief fault in Alison's analysis of beauty is that he does not make it sufficiently distinct from truth to which it is necessarily wedded; and that he argues against the idea that beauty has its seat in proportion, fitness, and other attributes, while nevertheless he makes them essential attributes of truth; the *true* rose being the rose that has regularity and symmetry of form, and a color specially adapted to set off its form.

The modern French philosopher, Cousin, is one of the ablest, as

well as most comprehensive analyzers of Beauty. His division of his two Courses of Lectures, the first treating of the "True, the Beautiful, and the Good" in themselves, and the second of "Beauty in Things," indicates a recognition of the distinction between abstract and concrete beauty. He thinks that the theory of Plato, in his Hippias, that beauty consists of the suitableness of means to an end, is nearest to the true view. A condition, however, of *suitableness*, is proportion and order; unity and variety are among its essential elements; while even the ideal, the fictitious, is in an important respect suited to our nature. Summing up his views of the multiplied elements that unite to give us the impression of "beauty in things," he concludes: "These distinctions and these reunions are not contradictory; the great law of beauty, like that of truth, is unity as well as variety." Having developed thus the natural elements of beauty, or the principles of law in natural forms that give the impression of beauty, he refers to Winckelmann's masterly analysis of the Apollo Belvidere, especially of the "face," as "expressing beauty of soul;" and uses Plato's own illustration to show that moral beauty may be so eminent as to make natural ugliness to appear beautiful. "The natural face of Socrates contrasts strongly with the type of Grecian beauty; but look upon him on his deathbed, at the moment of drinking the hemlock, conversing with his disciples on the immortality of the soul; and his face will appear to you sublime." There can be no question that a correct analysis of beauty in the concrete will lead us to fix upon the particulars already considered in the preceding chapter as its chief elements.

Sect. 4. Æsthetic Judgment; the process of the mind by which we decide that an object is beautiful.

As the relation between the true, the beautiful, the good, and the right, is so close, we might anticipate that the process by which in any case we decide that a thing is true, good, or beautiful, or an act right, would be similar. As the idea of abstract beauty, like that of truth, goodness, or right, is a suggestion arising spontaneously in the mind, so we decide that an object is beautiful by exercising upon its consideration the same powers of mind which we employ in deciding that it is true, good, or right.

When a child first sees a cricket-ball neatly rounded and stitched, at rest or flying in the air, a process of syllogistic reasoning with its two premises and its consequent conclusion is instinctively suggested. He sees the ball, its elaborated form, its projectile motion; he has

confidence in the testimony of his eyesight; and this axiom is his first premise. At the same moment he has the consciousness of an inward conviction that the ball could not possess such a form, or move in such a manner, unless the hand of some intelligent being had formed it and given it its impulse; he has confidence in this testimony of his consciousness; and this axiom is his second premise. He has thus arrived at absolute truth, by a process of metaphysical reasoning, upon which no philosopher can improve; for it is only superior skill in employing the powers of reasoning native to man, the power of observing facts, of marking the mind's suggestions as to their causes, and of referring the one to the other, that distinguishes a Newton from a child or a savage.

By a similar process, a child, or a barbarian, is led to decide upon the goodness of a thing, or the right of an action. If a parent would satisfy his child that any article of food, clothing, or medicine, is good for him, he takes for granted, first, that the child has the idea that a thing is good which is adapted to promote his individual interest and permanent welfare; second, that he can observe the effects of what he eats; and that these two impressions may lead him to a wise decision. Thus by a satisfactory conclusion from two credible premises, the one a self-evident truth, the other an observed fact, men are led to the good precisely as they are to the true in their material, intellectual, moral, and religious relations to the world and to their fellow-beings. So if the parent would convince a child that an act of falsehood, theft, or retaliation, is wrong, he pre-supposes that the child has the idea of right and wrong, and the impulse to do right; and he endeavors so to present the facts in the case as to lead the child himself to bring that case under the law. In every age and land, before courts of justice or assemblies gathered for moral and religious instruction, through a syllogistic chain embracing two established premises and their legitimate conclusion, the mind is led to judge of right in individual cases.

It would seem that no question could arise as to the propriety and the necessity of a similar mode of judging where the *beauty* of objects is the subject of inquiry. At the sound of a sweet-voiced singing bird, or of a well-trained musical band, at sight of a richly colored flower, a gracefully moving horse, or of a lovely female face, the eye of the child, of the savage, and of the philosopher, would alike sparkle with delight; and were any one of this company of beholders, so diversified in character, asked the cause of his pleasure, he would present the same view and in the same order of thought.

He has heard the peculiar melody from the single note of the warbler and the combined harmony of many-toned instruments; he has seen the peculiar color, form, movement, and expression; and this is his first premise. He has within him the common organism of ear, eye, and associated soul, on which, such sounds and sights are made to produce a pleasant impression; and this is his second premise. It is by the use of his judgment upon the facts, and of his taste upon a principle, that every beholder of an object decides upon its beauty as he does upon its truth.

The careful student will be able to trace this as the virtual teaching of critics in ancient and modern times. Socrates, according to Plato's representation employed his keenest power of analysis, his most comprehensive range of illustration and his closest logic as well as his most admirable wit in his reasoning upon beauty; this theme seeming to call forth the sculptor-son of Sophroniscus in the age of the triumph of Grecian art more than the subject of the true, if not also more than the consideration of the good and the right. The fact that we are to use our judgment and reasoning powers not only in arriving at the abstract idea of beauty, but also in deciding on the questions 'what is beautiful,' and 'why do we decide that this or the other thing is beautiful,' is plainly indicated in the elaborate treatises which metaphysicians, critics and rhetoricians have devoted to the discussion of the subjects of taste and of beauty. The important place which the study of Beauty holds in true science and in the legitimate use of the mental faculties is intimated by Lord Bacon when in his "Novum Organon," he divides the powers of the mind and their fields of employ into *memory* for history natural, civil and sacred, *phantasy* for poetry and art, and *reason* for science and philosophy. Kant gives the leading position to this field of investigation, when treating of judgment he ascribes to it two modes; the æsthetical which considers the concurrence of elements in the forms of things to produce a sentiment of pleasure; and the teleological which considers the simple truth of things without regard to any pleasure afforded by them. Reid, in arguing against Hume's position that judgment and reasoning do not lead to moral truth, indirectly illustrates how the mind is employed on questions of beauty. Hume in support of his position had urged; "Euclid fully explained all the qualities of the circle; but has not, in any proposition, said a word of its beauty. The reason is evident; beauty is not a quality of the circle." To this Reid replied; *first*, that Euclid did not discover all the properties of the circle, many having been discovered in

later times; *second*, Euclid never digresses from his one purpose, which is to demonstrate mathematical truths; and, adds Reid, "beauty is a quality of the circle not demonstrable by mathematical reasoning, but immediately perceived by a good taste." Yet again, Cousin's conviction of the active and logical employ in this field of the powers of the mind is so strong that it leads him to make taste a compound faculty; his language being, "Taste is not a simple faculty; it is a happy combination of the three faculties, judgment, sentiment, imagination, which serve for the perception and the reproduction of the beautiful." His second course of Lectures on "Beauty in Things" is entirely devoted to the exercise of the mind in this department.

In fine a careful observation will lead us to conclude that the mind with its varied powers is employed in deciding on the beauty, as it is on the truth of things or principles brought before us. No man can give a theoretical reason *why* he thinks an object beautiful, any more than why he declares it true; he can only appeal to the innate conviction of all men. Yet every man does refer to particular qualities in the form, color, motion and relations of objects in stating *what* he regards as actually beautiful. When an object, as an apple, is placed before us, and we are asked whether it is a true, or a beautiful apple, the exercise of our powers of mind is substantially the same in the decision of the two questions. First, our eye scans the apparent *qualities* of the object, its form and its color, in order to gain a judgment of its substance as true and of its character as beautiful; *second*, our innate previous conviction of what constitutes truth or beauty is called up; *third*, judgment, aided by memory which recalls other specimens, and imagination which supplies what is not visible so as to fill up the mind's conception, scrutinizes appearances and decides whether they accord with the laws of truth and beauty. To use Kant's mode of designation, the æsthetic judgment acts in deciding on the beauty of an object as the teleological judgment in deciding upon the truth of the same object.

Sect. 5. Comparative Taste; the varied development of the idea of beauty among men; its probable absence in beings inferior, and its possible perfection in beings superior to man.

If the powers of the mind are employed in the same manner to decide upon the beauty as on the truth of an object, it is a legitimate inference that the natural and acquired power of correct decision on questions of beauty must differ in different persons, as does the

power of logical reasoning upon questions of truth. Moreover as no being inferior to man is supposed to possess the power of arriving at principles of abstract truth, though all animals below man have an intelligence which gives them practical knowledge of truth in the concrete, so animals may be supposed to have no theoretical apprehension of principles of beauty though subject in a measure to impressions from its objects. Yet again, as we are assured that there are beings higher than man in the gift of reason which apprehends truth, and as we ourselves may in another state of being possess this endowment in a higher degree, so may it be with the power of apprehending and judging of beauty.

There are differences in native power both of conceiving and judging of beauty which seem to be fixed by circumstances of age, sex, race, and national culture; while also in men of the same age, race, and general culture, the facility of using this power varies with both natural aptitude and special study. The child is fond of pure unmixed colors and rudely carved forms; while, too, as a child, both his power to reach higher truth and to appreciate higher beauties seems restricted by the limit of a child's development. The female sex, though quicker than the male in rudimentary studies, seem to stop at a limit in the grasp of advanced philosophy and science; just as in the physical development of the vocal organs by which thought is uttered, they come to a bound beyond which man passes. So, too, either from the force of nature or custom, it seems to be in the attainment of higher conception and execution in the field of beauty; since in the history of art eminent female sculptors and painters are as rare as eminent female sages and poets. The Asiatic, and especially the African race, is quick to attain the elements of science; but in the progress of advancement both these races stop short, each at its own fixed limit, of the goal attained by the European race; as is seen in Egypt where forms in architecture and sculpture, and colors in dress and painting beyond which the progressing Greek passed at once, became stereotyped models never improved. Yet again, while even the Turk has laid aside the gaudy equipage that helps to make the pomp of royalty, the sovereign of the most advanced European nation, the English, still retains the relics of mediæval taste; indicating that in improving taste, fashion and national custom have much to do. The general fact here presented, that age, sex, race, and nationality place limits to the development of powers made to be improved, is too palpably manifest not to be recognized; while the many and marked exceptions both confirm the rule by

the fact that they are exceptions, and at the same time illustrate its principle by revealing when examined the causes through whose operation they have become exceptions.

This general principle was recognized by the ancients. Aristotle discusses the limits of development in the appreciation of truth and beauty reached by different ages and sexes; and mentions the fact, that men of the same culture have keener or blunter native apprehension, and become more or less advanced in true taste according as they exercise their powers in the criticism and execution of works of art. Modern writers dwell upon the same fact; though sometimes without logical discrimination. Reid says, "The most perfect works of art have a beauty that strikes even the rude and ignorant; but they see only a small part of that beauty which is seen in such works by those who understand them perfectly and can produce them." "As the color of the body is very different in different climates, every nation preferring the color of its climate, and as, among us, one man prefers a fair beauty, another a brunette, without being able to give any reason for this preference, this diversity of taste has no standard in the common principles of human nature, but must arise from something that is different in different nations, and in different individuals of the same nation." Blair, while maintaining that there is among all mankind a common standard of taste, as like in its decisions as are those of reason and conscience, and contending that palpable differences of taste are as much perversions of a common nature as are abuses of the palate, yet urges that culture has as much to do with accuracy of judgment in art as it has in science. His words are, "When we refer to the concurring sentiments of men as the ultimate standard of taste, or of what is to be accounted beautiful in the arts, this is to be always understood of men placed in such situations as are favorable to exertions of taste." Burke remarks, "Sensibility and judgment, which are the qualities that compose what we commonly call taste, vary exceedingly in various people;" yet he adds, "there is rather less difference upon matters of taste among mankind than upon most of those matters which depend upon the naked reason." Alluding to the taste of early youth, and of men in the infancy of natural culture, he says: "I despair of ever receiving the same degree of pleasure from the most excellent performances of genius, which I felt in youth from pieces which my present judgment regards as trifling and contemptible." "The most powerful effects of poetry and music have been displayed, and perhaps, are still displayed, where these arts are but

in a low and imperfect state." "But as arts advance towards their perfection, the science of criticism advances with equal pace."

As taste is of a very low order when it first shows itself in a child, reason and conscience and general instinct having the same gradual development, as it is impossible to say at what precise period these innate powers begin their exercise, and as there is certainly a portion of early infancy when they are as undeveloped as if they had no existence, so probably in all animals inferior to man there is no commencement of development to these higher powers which mark the human race. Here it is of the utmost importance to discriminate, as the ancient metaphysicians did more than the moderns do, between the active power of forming conceptions of beauty in the abstract and the passive capacity of being affected by beauty in the concrete. This latter, to a certain extent, animals may enjoy; the ancients analyzed the fact; and modern critics, as Reid, Addison, and Burke, recognize it. It is a proverb that the camel is inspirited on his weary journey by his rider's rude flute, and the horse seems to feel pride in a gay equipage; but neither has any essential apprehension of the arts that thus affect them, for they do not, like the youngest child in whom reason has dawned, attempt to copy them. The nightingale sings sweetly, and the bee builds skilfully; but if these were arts with them, they could vary and improve upon their performance. Beings inferior to man may both be affected by, and also execute objects of beauty in the concrete; but they have no sense of the beautiful any more than they have a mathematical or metaphysical conception of the true; and, therefore, having no principles to guide them in their execution, they operate not as men, but as machines, turning out ever the same work.

As there seems to have been in the history of art, as well as of science, in Greece, Rome, and Modern Italy, a limit beyond which a nation, as an individual, could not go in their advance, and as nevertheless each stage of the new rise and progress of science and art in each nation has seemed, in some respect, to exceed any preceding, so it may be, as the ancients believed, that there is a state of being where the soul of man untrammeled by the body's grossness may have clearer perceptions, and attain higher executions in the fields of truth and beauty, than are possible to even the most gifted genius on earth. Plato's peculiar philosophy of the transmigration of souls and of man's spiritual existence prior to his life on earth, led him to the fancy that gifted men on earth are beings that have had a higher life in a spirit world, and that in them the cramped

spirit is striving in bonds to exert its innate power. The theory of Plato may be rejected; yet in his picture of this supposed past of genius in art, there may be a truth as to its future worthy of thought. It is important to observe, that the philosophy of art, as maintained by the ancients, cannot be understood unless this feature of it be kept in mind. In speaking of *Phantasy*, a word which Lord Bacon adopted as the best name for the mind's creative energy, Plato thus alludes to the more exalted conceptions of Truth and Beauty, which belong to the higher state of existence. "It is by having seen the Truth that man resumes the human form in the second life. The soul recollects the reality of Beauty it has seen in its celestial journeyings. This is the most desirable of all the forms of Phantasy; the Phantasy of the lover of the beautiful." The grave metaphysician, Reid, does not deem it unworthy his severe logic, as a teacher of mental philosophy, to notice this feature of comparative taste. He says: "We see many beauties, both of human and divine art, which the brute animals are incapable of perceiving; and superior beings may excel us as far in their discernment of true beauty, as we excel the brutes." He refers for illustration to Milton's picture of Satan, who almost falters in his fell purpose, as he gazes in admiration on the beauty of Adam and Eve. It is in keeping with this philosophy that the same sacred volume which pictures man in his original perfection, placed in a garden, whose every object was "pleasant to the eyes," "to dress and keep it," also paints the future world as a "Paradise," whose rivers are "clear as crystal," whose trees are "trees of life bearing every manner of fruit," whose central city is glittering with gems and gold, in whose abode every tongue sings and every hand strikes a golden harp, whose central head, the special object to be loved, is "chief among ten thousands, fairer than the children of men, and altogether lovely."[1]

CHAPTER VI.

THE CLASSES OF IMPRESSIONS PRODUCED ON MAN BY WORKS OF ART.

In speaking of the impression made by art on the human mind the general word beauty has been employed. This, however, like

[1] Rev. xxi., xxii.

the word truth is a term of comprehensive import. As there are various classes of truths, differing in their nature as widely as things and principles can, so there are classes of beauties proper, and there are associations of the general impressions of beauty with other special impressions on the sensibilities, calling for classification of these varied impressions of art.

While Truth as its ultimate end addresses the intellect, Beauty is designed to address the sensibilities. Some of the sensibilities of our nature are directly affected by art, others indirectly; while yet others have little relation to art criticism. Some designations, also, of these impressions have been employed in all languages and ages; while others have been special and local. Thus, everywhere and always the two general classifications of the beautiful and the sublime have been recognized; but the special conception of the graceful originated in Greece; the word elegant and its idea were Roman; while the designation picturesque is of modern coinage, French in origin and English in development. A general notice of the Mental Sensibilities to which art appeals, and a classification of the leading impressions awakened by its varied addresses, naturally follows the consideration of the Intellectual Faculties as employed in the field of the Beautiful.

Sect. 1. Classification of Mental Sensibilities; and designation of impressions properly æsthetic, or capable of being addressed by Art.

The general division of the sensibilities is into three classes; *emotions*, which are simple passive sensibilities; *affections* which are emotions with an impulse awakened by the object; and *desires* which are affections with a craving to possess or to serve the object. This division of the sensibilities, substantially recognized by the Greeks, and even by the Hebrews, is fixed in modern metaphysical analysis.

Emotions are divided into two general classes; instinctive or those instantaneously awakened whenever the object is presented; and deliberative, or rational, which arise when the reasoning powers are employed on an object. Among the Instinctive Emotions the following counterparts are most important; cheerfulness and sadness, arising from an undefined object; exhilaration and depression resulting from the condition of the individual affected; joy and sorrow, awakened by the condition of objects indirectly related to us; and gratification and regret called forth by the condition of things and beings so related to us as to involve responsibility. The general

division of the Deliberative Emotions is into the opposites, admiration and disgust; which two general emotions are awakened by the general negative quality of the novel or common, by the general positive quality of lively or tiresome, by the æsthetic attributes the beautiful or deformed, by the intellectual characteristics of witty or stupid, by the moral elements of proper or improper.

Affections, styled Passions when inordinate, are generally designated by the opposites Love and Hate; suggesting the classification into benevolent and malevolent affections. Among the benevolent the following are chief; love of kindred, of congenial friends, of benefactors, of dependents, of our Creator and Redeemer, as intelligent objects; and of home, country and nature, as objects without intelligence. Among the malevolent the principal are these; three that have reference to individual social relations, jealousy of domestic rivals, suspicion of untrustworthy business associates, and envy of fellow-aspirants for popular esteem; three that have regard to civil relations, indignation against the unworthy and the vicious, resentment against the unjust and the injurious, and revenge against the implacable and unmerciful; and three that enter into our religious relations, unsubmissiveness to the rightful authority of our Divine Maker and Ruler, indifference to the supreme excellence of the Author of all that is true, beautiful, good, and right, and ingratitude for the impartial and unmerited bounty of our Divine Benefactor and Saviour.

Desires, called Appetites when inordinate and unworthy, may be classified as to origin into physical and mental; while as to their end they relate to the present or the future. In their nature as relating to present objects, desires take the general character of Attachment to, or its opposite Aversion from the thing or being, which calls forth the impulse; while as relating to the future they come under the general designations of Hope and its opposite Fear. Desires arising from man's physical nature have their origin in the lower senses of smell, taste, touch, muscular action and nervous stimulation; and when in excess and called appetites they receive special names, as gluttony, bestiality and inebriety. Desires arising from the mental nature may be limited in their end to the individual, and have as their aim either a material object as wealth, an intellectual as knowledge, or a moral as integrity; they may relate to social connections, and have as objects companionship, power, esteem or usefulness; or they may be originated by our religious

connections, and have as their aspiration negative Divine approval, or positive Divine benefaction.

These three principles are to be observed in the relations which these three classes of sensibilities respectively hold to art; first, the impressions made by the fine arts are *emotions* only; second, the ends sought by design in the fine arts are the direct awakening of *affections;* and third, an indirect result, though not a direct aim or effect of works of art, may be the stimulating of *desires.* That the impression of beauty on the sensibilities as distinct from the intellectual nature, is an emotion, with the impulse towards an object which characterizes affection, or the craving for the possession of an object which constitutes desire, was clearly recognized by the ancient Greek philosophers Plato and Aristotle, and is carefully observed by writers of the present age, such as Alison, Cousin, Wayland and Haven. The design of the Fine Arts, not as an end but as a means to an end, to awaken affections, is well set forth by Reid; while the overlooking of this distinction seems to lie at the foundation of an important error of the Edinburgh critic, Lord Jeffrey. Reid says, "The emotion produced by beautiful objects is gay and pleasant. It sweetens and humanizes the temper, is friendly to every benevolent affection, and tends to allay sullen and angry passions. It enlivens the mind and disposes it to other agreeable emotions, such as those of love, hope and joy." "Beauty naturally produces love." Here the distinction is not preserved between emotions as "joy," affections as "love" and desires as "hope;" yet the important distinction between the immediate impression of beauty and the end it accomplishes as a means is well presented. Lord Jeffrey's expressions are like the following. "The basis of our theory is that the beauty which we impute to outward objects is nothing more than the reflection of our own inward emotions, and is made up entirely of certain little portions of love, pity and other affections which have been connected with these objects, and still adhere, as it were, to them, and move us anew whenever they are presented to our observation;" in which there is a failure to discriminate between emotions and affections as well as an inadmissible theory of the origin of the idea of beauty. Burke going farther in the same confused pathway makes the "attachment" which unites the sexes in that "mixed passion" called "love," the "beauty of the sex;" in which a *desire* of human nature, and that of a low order, is constituted into the essential principle of beauty. Cousin with great clearness and force makes the just discrimination; urging that "the idea

of the beautiful is free from all desire;" "the artist sees only the beautiful where the sensual man sees only the alluring and the frightful." He cites Horace Vernet lashed to the mast of a vessel in a storm that he might enjoy and then paint the scene, as proof that, "when he knows fear the artist vanishes;" and urges with warmth that the admiration of beauty in the female form utterly excludes every sensuous impression.

Recurring then to the classes of emotions above mentioned, it may be fixed in mind that any one of them, either instinctive or deliberative, may be directly awakened by works of art; and in works of sculpture and painting we may look to find a legitimate appeal alike to the indefinite emotions of cheerfulness and sadness, or to the more definite class, joy and sorrow; while, too, the lowest of all deliberative emotions, the impression of novelty, may be in its place as dignified as the nobler emotion of the beautiful proper. Recalling the classes of affections grouped together, it may be remembered that in the work of design the artist may make the awakening of either of these, as love of home, of country, or of the Creator, his direct aim. Returning yet again, to the review of the desires above classified, it may be remarked that the nurturing of any one of these in the individual and the nation, as thirst for knowledge, fame, or moral excellence, may, as Plato in his Republic and in his Laws argues, be a result indirectly sought by the statesman in his patronage of art.

SECT. 2. THE BEAUTIFUL PROPER AND IDEAS ALLIED; AS THE DELICATE, THE EXQUISITE, THE FAIR, THE BRILLIANT, THE GRACEFUL, THE PRETTY; IN WHICH BEAUTY OF SUBSTANCE, FORM, COLOR, LUSTRE, MOTION AND MORAL LOVELINESS SEVERALLY PREDOMINATE.

In discriminating the beautiful proper from its varied allied attractive qualities, regard must be had to the organ that perceives the quality, and to the size of the object in which the quality resides; as well as to the characteristics of substance, form, color, lustre, motion and moral loveliness, which may attend upon, or specially constitute, the quality of beauty which impresses us in the object. It was the Greeks who most thoroughly and exclusively entered into the spirit of the beautiful proper; and it is among them that we find the nicest discrimination of differences in this their special field of art execution. Not only did they in the words of their mother-tongue, before Homer's day, distinguish between the general idea of Beauty called *kosmos*, covering all the impressions of æsthetic sensi-

bility, and the special conception of beauty proper, called *kallos;* but their philosophers, and even their poets, going farther, made the yet nicer discriminations in the field of beauty proper which separate its allied elements, one from another.

Lord Kames observes: "Beauty in its native signification is appropriated to objects of sight." "An agreeable impression is made by the musical sounds of a bugle, by the soft texture of velvet, by the delicious flavor of a peach, and the spicy fragrance of the honey-suckle; but it is only the agreeable impression made by objects as they address the eye to which the word beauty is properly applied. Yet the designation beautiful is given to each of the impressions on other senses than sight above referred to; probably at first, from the fact, that because of the pleasure they give to other senses, objects which otherwise would make no pleasant impression on the eye, come to be so agreeable to it, that we call the bugle, the velvet, the peach, the honey-suckle, beautiful. Going farther, we speak of a beautiful thought, metaphor, theorem, discovery; applying the word to ideas or objects that address us through no one of the bodily senses, but appeal to the mind itself without the intervention of the bodily senses; in which case there is not as before a transfer of the language of one of the senses to that of another, but a transfer of the terms of the material to the spiritual." The oft-repeated censure of the American people for the excessive latitude with which they use the word "beautiful," is probably only in a measure legitimate; and that upon the principle thus stated by Reid, "There are moral beauties as well as natural; beauties in the objects of sense and in intellectual objects; in the works of men and in the works of God; in things inanimate, in brute animals and in rational beings; in the constitution of the body of man, and in the constitution of his mind. There is no real excellence which has not in it beauty to a discerning eye, when placed in a proper point of view; and it is as difficult to enumerate the ingredients of beauty as the ingredients of real excellence." Reid's statement is a confirmation of the sentiment that "the beautiful" is indissolubly associated with the good, or "excellent," as well as the true or existing "works" of God and man. His language, too, affords an illustration of the fact that we do transfer, even without thought, the language of one sense to another, and the language of the material to the spiritual; for it is apparently without being aware of his own usage that Reid here used the words "eye" and "view" in a general and even incorporeal signification.

A more important consideration in fixing the limits of the field of the beautiful proper is suggested in the following remark of Burke: "Attending to their *quantity* beautiful objects are comparatively small." In illustrating this remark, Burke is influenced by his fundamental theory already alluded to; and hence presents as confirmation, the fact, that "in most languages the objects of love are spoken of under diminutive epithets;" a fact which he illustrates by reference to the Greek and the English vocabularies. The true idea in this respect, as careful reflection intimates, seems to be this; we properly, and therefore naturally, apply the word beautiful to an object however small or large, which the eye takes in at its ordinary angle of vision; whose range and law will be considered under the subject of Drawing.[1] Thus we speak of a statue of natural dimensions, and of ordinary easel paintings, as beautiful works; because at the point to which we naturally retire to view them, we take in the entire work. So, too, we instinctively speak of a building as beautiful, when at a distance the eye takes it in as a small object; and so of a *vista* view in a landscape, even when the eye courses over miles of a narrow valley, closed, perhaps, by a broad and lofty mountain. We cannot use any other word than "beautiful," to express our admiration of any view, however extended, that comes into the range of the eye's single glance. It is not the smallness of the object which makes it seem natural to apply the word beautiful; for it is as natural to call a minute object that does not fill the range of vision "tiny" and "exquisite," as it is to call an object admired, but too large to be taken in at a glance, "grand" or "magnificent." It is the completeness and fullness of view which gives the limit of the field of the beautiful proper.

Proceeding from the mere general element of quantity as relating to beauty, the consideration of *substance* is naturally next suggested. There is as we have seen,[2] a beauty in substance; and when this element enters largely into beauty, the word *delicate* is appropriately employed to express it. To this element of beauty Kames merely alludes when mentioning "the slender make of a horse," as a chief charm; while Burke devotes a section to delicacy; urging that it is specially slenderness and tenuity of material that gives us the impression of beauty; and citing the myrtle as opposed to the oak, the greyhound as opposed to the mastiff, and the Arabian steed as opposed to the war-horse, in confirmation of his view. Alison tends

[1] Book II., Chap. ii., Sect. 4.

[2] Book I., Chap. iv., Sect. 1.

towards the correct analysis, in his argument that "it is not delicacy in itself, but delicacy in the appropriate material, that constitutes beauty; since delicate foliage in marble and iron seems unnatural, and therefore inappropriate. Delicacy is properly an attribute of substance; it is that quality in *material*, from fineness of texture and tenacity of particles united, that admits of a prolonged and slender form." Hence the lexicographers make "fineness of texture," the primary definition of "delicacy;" hence the usual designation of "delicate" applied to the tendrils of a vine, to the legs and beak of a bird, to the horns and tails of animals, to thread of gold, and to fine tracery cut in marble or cast in iron having a relief so slight that it is not exposed to fracture; and hence, too, our association of the word "fine" with "delicate," in metaphorical usage, as when we speak of a man of delicate sensibility, adding by way of explanation that he is a person of "refined nature," and therefore of "fine feelings." It is to beauty in substance we are to look for the force of Alison's remark: "The least attention to the common language of mankind on such subjects will sufficiently show how much the expression delicacy determines the beauty of all ornamental forms." We shall have occasion to observe that this statement is referable mainly, as its language may imply, to the "Decorative Arts."

The beauty found in *form* is naturally suggested after that of substance. When this element is so marked as to overshadow other features of beauty, or when it is separated from others for special consideration, the natural term by which to express its impression is the word "exquisite." As its derivation indicates the word refers properly to the exact nicety with which straight or regularly curved lines are drawn by a master in art. Hence the English lexicographer gives as its first meaning "nice, exact;" hence we speak of "exquisite workmanship" referring only to the forms executed; and hence too we use the metaphorical expression "a man of exquisite mould in taste and sensibility," the figure showing that the idea of form is prominent in the mind. Coupled as it often is with "tiny" it most manifestly refers to skilful working out of the form in a small object such as the tiny always indicates.

The beauty residing in *color* is next in thought. When this element predominates in an object called beautiful we designate it as "fair." The Saxon derivation of the word leads us back to the idea of bringing out the beauty of original color in wood, stone, or metal, by scouring, polishing, or burnishing. The lexicographer's first

definition is "clear, free from spots and from a dark hue." As the Asiatics are better critics in color than in form, it is natural that we should find in our translation of the sacred scriptures this nice discrimination in the writings of the Hebrew king and Jewish apostle. The former expresses it in the picture of a maiden in that land where color in the human features varies more comparatively than form; speaking of his beloved "as the fairest of women," though bronzed by the sun, because of her "dove's eyes," her "hair" black as the "mountain goat," her teeth white as "newly shorn sheep," her "lips like a thread of scarlet," and her "temples" like "a slice of pomegranate" within her locks.[1] That it is to color we specially make reference in the word "fair" is perhaps more convincingly illustrated in the metaphoric usage of the word; as in the expression "fair weather;" the image before the mind being of course not a form but a color assumed by the sky, as is seen in Christ's oriental allusion, "Ye say, It will be fair weather, for the sky is red."[2]

Associated with color is beauty derived from *lustre;* an external aspect thrown upon an object rather than a quality imparted to it by its perfect reflection of pure white light; while color proper is a similar but partial reflection of decomposed light. The word "*brilliant*" is used to express this element; a word naturally originating among the French people, whose sky, so associated with and yet such a contrast to that of England, gives occasion for the designation. The beauty of the diamond is found exclusively in its lustre; for its form has little near at hand, and nothing at the distance where its beauty appears, to commend it; a beauty whose characteristic is embodied in the name of "brilliant," which nations have agreed in giving it. This characteristic is specially marked in the word which any traveler going from London to Paris naturally employs in contrasting the two; when the foggy, smoky, dingy city on the Thames is called "sombre," and the clear-shining, polished and glistening walls of the city on the Seine are declared to be "brilliant." Burke, under the head of "light," alludes to this element of beauty; as do also other critics.

Beauty of *motion*, the separate and enthusiastic study of so many critics, ancient and modern, is the foundation of that peculiar aim of the Greek artist, "grace." Limited within the field of beauty proper, the earliest Greek sculptor sought to make the single object which he presented to view appear a living moving being. The

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[1] See Song of Solomon, i. 5, 6, 8, 15· iv. 1—7. [2] Matt. xvi. 2.

rudest Greek architect constructed the first temples of just those dimensions as to length, breadth and height which could be taken in at one view; while he gave to the easy ascent of the surrounding steps, and the yet gentler slope of the low roof such an inspiring aspect that the beholder felt himself drawn by an irresistible charm to the delight of tripping, sprite-like, up the inviting platform. The bard of the earliest Greek lyric gave to all future followers a measure now tripping and now stately in movement which made feet and hands join the histrione as he himself moved, and sought to move others to his strain; and the word that can alone adequately express this elementary idea entering into all Greek art is the word *grace*. Plato alludes to it in picturing Cupid as the "most graceful" of beings because he is "flexible and capable of twining about every object" to which he attaches himself. Virgil illustrates it, when he represents Æneas as recognizing his mother Venus simply by the graceful bend of her neck as she turned away from him.[1] Burke, defining "grace," says, "it is an idea belonging to posture and motion;" "it requires a small inflection of the body;" and it demands that "there be no appearance of difficulty" in the posture as indicating motion. Reid more fully remarks, "There is no grace without motion; some genteel or pleasing motion either of the whole body, or of some limb, or at least of some feature. Hence, in the face, grace appears on those features that are movable, and change with the varying emotions and sentiments of the mind; such as the eyes and eyebrows, the mouth and parts adjacent."

The beauty that has its seat in attributes of the soul, *moral loveliness*, brought out in expression, is perhaps more often popularly expressed by the word "pretty," than by any other designation. Allied to a Welsh word meaning *appropriate*, its ordinary use seems to accord with this origin. An intelligent and personally amiable man or woman who should be heard to say of a lady, "She is a pretty woman," would be at once understood as uttering a judgment called forth not by a momentary impression derived from any of the qualities heretofore mentioned; but from a conviction formed after an acquaintance more or less extended, founded upon the observed mental and moral traits belonging to the person spoken of, and confirmed in speaking of it to others by reference to the expression upon features, otherwise not specially marked, which those internal qualities had produced. Thus some writer says, "The pretty

[1] Virg. Æneid, I. 405.

gentleman is the most complaisant creature in the world." So too we speak of a pretty dress as one becoming the wearer; and of a pretty story or song as one appropriate to the age of those to whom it is addressed. The element indicated by the word "pretty" belongs to the field of beauty proper, as an attribute easily taken in by a glance of the eye or a single effort of the mind.

SECT. 3. THE GRAND; BEAUTY UNITED TO MASSIVENESS: AND THE ASSOCIATED IDEAS, THE NOBLE, THE ELEGANT, THE SUPERB, THE MAGNIFICENT, THE SUBLIME, THE MAJESTIC; IN WHICH THE ELEMENTS OF SUBSTANCE, FORM, COLOR, LUSTRE, MOTION AND MORAL DIGNITY ARE SEVERALLY PREDOMINANT.

Objects pleasing to the eye, which can be taken in at a glance, are called *beautiful*. There are, however, things and scenes too massive and vast to be apprehended without extended survey, which give us most exalted delight. The word "sublime" has been used often to designate the general impression made on us by large objects that please; but, as we shall see, the sublime is a special impression to be classed under a more general one. As the beautiful is the general designation for the pleasing effects of smaller objects, so "the grand" is the appropriate designation of the general impression of pleasure produced by larger objects.

The field of the beautiful proper was the special culture of the Greeks; the wider domain of the grand is marked everywhere by the track of its Roman lords. Asiatic taste, of which the Egyptian was the perfected ancient type, gloried in mere massiveness without the exterior adornment of beauty in detail. The Roman was proud to attain the spreading breadth and towering height sought by the Egyptian; while the comprehensiveness as well as the refinement of his nature made him add the finished ornament of the Greek; thus achieving by the union an effect to express which he originated the word "grand." We shall be led to observe, that each of the words commonly employed to denote special elements belonging to this general idea are Roman in their origin.

The grand, as it appears in *substance*, is properly designated by the word "noble." The Romans used the word in early times to designate the just renown of a man who becomes noted for great qualities; though at the era when Pliny wrote, it had already assumed the degenerate signification, now common in Europe, designating a man who, by birth, rather than by personal worth, held rank above ordinary men. Its primitive, as well as more modern signification,

is suggestive of the idea that in the blood, in native characteristics of body and of mind, there is in the person called noble a more refined and excellent nature than belongs to the composition of common people. So fixed is this idea as the meaning of this word, that men of science have chosen it to designate the elements in nature which in their essence are most precious; and they class mercury, silver, gold, and platinum, as the "noble metals." When an edifice, or a monumental shaft is spoken of as noble, we have instinctively suggested the conception of a vast object formed of superior material. So, if a horse be mentioned as a noble animal, we expect to find one superior in size and especially sound in limbs.

The grand, when especially striking on account of its *form*, is properly designated by the Latin word "elegant." The Romans first employed it to designate the grandeur of form that characterized their men; next to express the adorned vastness that appeared in their edifices, so fundamentally different in form from those of the Greeks; and finally, in metaphor, they spoke of the "elegant arts." The word when properly used in modern times, relates to the union of native capacity and of culture in a superior body or mind; an elegant mansion being one in which the beholder dwells with delight on the mingled ampleness and finish of the residence; and an elegant scholar, one who having a mind duly developed in all its faculties, has cultured each by proportionate study in the varied fields of learning.

The grand, as it appears in *color*, is naturally expressed by the term "superb." In the early Roman times, as applied to their kings, it was a word of worthy signification, relating to splendor in personal achievements; though in the times of the republic it denoted unworthy ostentation. It was the natural designation of the richly colored robe of state, worn by the early kings; and thus using it, Virgil speaks of the "superb purple" and "superb tapestry curtains."[1] In modern language the statement that a general was superbly dressed would draw direct attention both to the gorgeous colors with which he was decorated, and to the breadth of their display. A man of superb imagination is one in whose imagery gorgeous coloring sets off boldness of conception.

The grand, when lit up with the attraction of *lustre*, is best designated by the word "magnificent." It was easy among the Romans to attach to this, as to the former word, an unworthy signification,

[1] Virg. Æneid, I. 639, 697.

when royalty became obnoxious; and yet the idea of natural excellence was always retained in Latin usage of the term. Thus the historian, Nepos, characterizes as "magnificent," a man fond of brilliant display, who nevertheless possesses true grandeur of character. No one can listen to a French cicerone in Paris as he uses the words "brilliant" and "magnificent," without realizing their native distinction as applied to art. While the city, viewed in detail, is called "brilliant," the vast pile of the "Hopital des Invalides," with its gilded and glistening dome, cannot be called anything else than "magnificent." Constantinople, on the other hand, with its numerous massive domes radiant with white paint in the morning sunbeams, is magnificent when seen as a whole from the Bosphorus; but it is far from brilliant when viewed near and in detail from the street.

The grand, when the impression of *motion* predominates in it, takes properly the designation of the "sublime." Though the Greeks had the idea, and in poetry often appealed to it, their word to express the sublime was an inadequate one, and in the plastic arts the sentiment was seldom called forth by their artists. Awakened as it is by less of studied finish than is demanded for any of the other effects enumerated under the grand, and native and congenial to the oriental caste of mind, it is an impression specially favorite with the Asiatics, and an effect specially sought by their artists. Nothing could more strikingly illustrate this idea than the efforts of Hebrew poets and sculptors to give form to their conceptions of a living moving Deity, unseen, yet everywhere present; a spirit like the clouds floating above the earth, and like the clouds ever moving and brooding as on restless wings. The Roman idea of their own word sublime, both in its literal and metaphorical signification, is seen in Virgil's allusion to the "pole" about which the heavens turn as "sublime" above our heads; and the relation of "the sublime" to "the graceful," both implying motion, is beautifully indicated when the same poet, after representing Venus as known to Æneas by the *grace* of her movement as she glided along the earth, designates her as "sublime"[1] when bounding upward she ascended into the heavens. The modern employ of the word is better illustrated by the practical usage of imaginative authors than by the theoretic statement of critics. Burke, Cousin, and other writers virtually recognize this characteristic of the sublime; making this emotion to spring from objects and ideas arousing wonder and awe because

[1] Virg. Æneid, I. 405, 415.

uncomprehended, and indefinite or infinite. Poets restrict their use of the word to personal beings, or to personified objects and scenes in which there is the movement as of a self-acting agent. Mont Blanc, as pictured by Coleridge, lifting its "bald awful front," and "piercing the deep black" vault of heaven, the "cross of Christ," as sung by Bowring, "towering" with "all the light of sacred story gathered round its head," are declared to be "*sublime*," because of the life and movement attributed to them. The jet of burning lava hurled from the crater of Vesuvius in an eruption is sublime; the fall and roll of the melted mass down the mountain side, is rather grand or magnificent; for it is not the glaring light or vastness, or any other feature of the object except the elastic force of the upward motion that constitutes the sublime proper.

When the grand is accompanied by *moral dignity* the term "majestic" is properly used to express its impression. The Romans seem to have coined this word in their own tongue; though it was found in the Hebrew. The Latin poets and orators spoke of the *majesty* of their gods and of their state. In Christian Theology "the majesty" of God is grouped with His "beauty and glory;" these three being the æsthetic impressions made on man by His relation to His physical, intellectual, and moral creations. The proper discrimination of the subdivisions of the grand as well as of the beautiful will be found to give precision in thought and expression in the criticism of art.

Sect. 4. The Picturesque; beauty in separate parts so grouped as to secure grandeur in the combined whole.

The particular impression designated by the word "picturesque" would hardly claim separate consideration but for its association with the modern advance of landscape painting and landscape gardening. In its nature it is distinct from the classes of impressions just considered. It has relations to the beautiful; but is not like the grand, a modification of it originating in the addition of a new element to the beautiful. It is rather a complex impression, coming from several objects, distinct in themselves and in their order of beauty; yet so grouped into a whole as to produce a pleasing impression.

The word picturesque is properly French; for, although found also in the Italian, the language of art, it has probably been introduced into this as into the English tongue through French influence. The word relates to that artificial grouping of objects which makes them

seem not natural but parts of a picture. A picturesque costume is properly one which whether antique or modern, foreign or domestic, is so adjusted, that every one who beholds it says, "that is not natural;" it is "too studied," it is "too artificial;" it is a dress "for a picture." As most people don a more than ordinarily precise dress, and assume an air for effect, when a picture of their persons is to be taken, there was a natural cause in which the style called picturesque originated. Alison, finding a parallel between poetry and plastic art, gives the picturesque a prominent place amongst "associations" which conspire to produce the emotion of the beautiful and the sublime. Quoting the poets from Homer to Goldsmith who furnish "grouping eminently picturesque," he says; "In these and a thousand other instances that might be produced, I believe every man of sensibility will be conscious of a variety of great or pleasing images passing with rapidity in his imagination, beyond what the scene or description immediately before him can, of itself, excite." "It is indeed in a powerless state of revery, when we are carried on by our conceptions, not guiding them, that the deepest emotions of beauty and sublimity are felt." Thus though the picturesque is from its nature artificial, it takes under the inspiration of true genius the highest form conceived in Plato's ideal of the beautiful.

It was at the rise in comparatively modern times of landscape painting proper, that the style designated picturesque came into notice. The ancient painters in their historic pieces did not work up the details of far-reaching back-ground; they did not paint landscape proper. When it was attempted, and began to be successfully executed, though nature was substantially the artist's standard, the landscape could not be truly, like a human being sitting for a portrait, an unchanging ever present model to be copied. Sunlight and shade alternate; trees wave and animals move from their first observed positions; and even foliage and flowers change their forms and hues with every rolling hour. It was natural and necessary, therefore, that the landscape painter should select some one definite position of each object, and some chosen grouping of the whole; and these chosen attitudes and preferred combinations, necessarily artificial to a certain extent, gave an ideal instead of a real character to the scene depicted, which took the name of picturesque.

In the same connection a style of landscape gardening arose, in which walks and trees were neither arranged in stiff, mathematically exact lines, nor yet left to the fortuitous grouping of nature; and, this artificial and yet artistic intrusion into nature's order, just far

enough to add the charm of art to that of nature, was designated picturesque. Whether applied to personal adornment, to a painting, or to a landscape, the term picturesque relates mainly to the *grouping* of beauties

SECT. 5. THE NOVEL; BEAUTY OF A LOWER ORDER, AWAKENING EMOTIONS OF SURPRISE BY NEWNESS OF FORM, COLOR OR RELATION.

Lord Kames opens his chapter on "Novelty" with this remark; "Of all the circumstances that raise emotions, not excepting beauty nor even greatness, novelty has the most powerful influence." The impression of the novel is entirely distinct both from the beautiful and the grand; it is the lowest in dignity of all the impressions made by art, and yet, like the emotion of wonder to which it appeals, it is the strongest of human impulses awakening surprise; it is a leading element in the picturesque; while for the same reason it enters into complex impressions of the grotesque, the tragic and the comic. It is therefore properly considered next to the impressions involving the idea of the beautiful, and before the more complex impressions of which it forms a part.

The universality and strength of this impression are seen in every age and land, and among every class of people. Any unusual sight or sound in the street, a procession parading with banners or headed by martial music, however unmeaning or absurd be the object, any scene that is in the slightest degree "novel," draws all classes and ages to the window; for curiosity moves the gray-haired sire as much as the child, and the philosopher as powerfully as the peasant. It was recorded of the ancient Hebrews that they continually asked after new luxuries, new pleasures and even new gods.[1] The Greeks, as intimated by Plato, were even in their best days fond "of novel things," and of "novel deities;" while Luke the Christian physician, attests that in the age of Nero of Rome "the Athenians and foreigners" resident in their city, "spent their time in nothing else than to tell or hear some new thing."[2] Cicero in his moral writings laments that the practical Roman people were drawn away by "new things" from the old and substantial. Jesus spoke of the controlling power of novelty over men generally, when, alluding to the curiosity awakened in a crowd by the sound of the simplest pipe, or reed, used as a musical instrument, he asked the people that flocked to hear John's

[1] Deut. xxxii. 17; Judg. v. 8; Eccl. i. 10; Cant. vii. 13; Psal. iv. 6.

[2] Acts xvii. 21.

preaching, "What went ye out into the wilderness to see? A reed shaken with the wind?"[1]

While novelty is the most powerful of excitements to human sensibility it is nevertheless the lowest in dignity and the most transitory in influence. To this Xenophon in his "Memoirs of Socrates" refers when in the opening paragraph of his defence he replies to the charge that Socrates had corrupted the youth, enticing them by "novelties" from "faith in the gods;" a charge worthy of condemnation in the mere demagogue, who temporarily may give himself an undue public importance by his skill in an ever-shifting appeal to the strongest yet least worthy impulse of his hearers. Yet Burke makes "novelty" the subject of his opening section in his treatise on the "Sublime and the Beautiful;" and that for these reasons, "The first and simplest emotion which we discover in the human mind is curiosity." "Some degree of novelty must be one of the materials in every instrument that works on the mind; and curiosity blends itself more or less with all our passions." Reid too gives this topic a similar prominence in place, though not in importance.

SECT. 6. THE GROTESQUE; BEAUTY IN DISTORTED FORMS AND INCONGRUOUS RELATIONS, GIVING RISE TO IMPRESSIONS OF NOVELTY, HORROR, OR LUDICROUSNESS.

The word *grotesque* is derived from the French word grotte; its idea is oriental rather than Grecian; and as developed in Europe it belongs to the spirit of the Middle Ages rather than to the era of classic taste. It is embodied in sculpture made to be seen dimly in a grotto; either inanimate things such as jagged rocks and shapeless stumps, or animate creatures such as bats clinging to the ceiling, owls perched in jutting ledges, and toads squat in dark corners, all indistinct and deformed, either hideous or ludicrous in appearance, as seen through the deep shade. The term is applied properly to objects at rest, not in action; and to individuals rather than in groups.

It is a sentiment peculiarly Asiatic and very slightly tinging classic art which expresses itself in the grotesque. In Chinese art, it is seen to excess; their sculpture, painting, architectural decoration and ornamental gardening, all bearing abundant witness of its sway. The Egyptians but rarely resorted to the grotesque; their god Typhon being the only marked specimen. This is the more remarkable since the perfect repose characterizing their style of art

[1] Matt. xi. 7.

was adapted to the grotesque while their love of the comic invited to it. The Greeks seemed to have had no sentiment in keeping with the grotesque; the universal spirit of animation and action pervading their art, and their love of transparence, forbidding it; while too, their high-toned aspiring after the heroic was inconsistent with anything grovelling. To the Romans it was more congenial. This is witnessed abundantly in specimens of the age of Roman luxury and licentiousness which originated the decorations of baths and private sleeping-rooms now unburied at Pompeii. It is also approximated in the earlier decoration of grottoes and dark bath vaults, with images of forest and sea deities, usually colossal, often hideous, always inspiring something like awe when seen in deep shade, though not in the modern sense strictly grotesque. In the Middle Ages, throughout central and western Europe, the whole spirit of the people as well as of the rulers and the artists, seemed in keeping with this lower order of art; as is witnessed in the old Cathedrals of Paris and other French and German cities, perfectly overloaded with every species of grotesque and hideous figures sculptured in high relief. In the grotto proper the occasional introduction of the grotesque is in accordance with the demands of true art, as it is also in grotto-like architectural works such as arbors, summer-houses, green-houses, and even rural mansions; but at the portal of a sanctuary for religious worship no propriety of art can justify the introduction of toads, lizards, and other hideous devices.

Sect. 7. The Tragic; beauty and its kindred ideas, accompanied by human passion or action awakening sorrowful emotions.

One leading division of the emotions consists of the opposites, joy and sorrow. When the latter of these is associated with the emotion of beauty, of grandeur, or any of their kindred impressions, and this compound sentiment expresses itself through human passion or action, the combined effect is called tragic.

The words tragic, and tragedy, are found at an early period in the Greek language; Herodotus, the historian, using them in the signification common to all subsequent ages. The question whether these terms were derived from the word meaning a "goat," or from an obsolete word meaning "sad," is as unimportant as it is difficult of determination. Plato used the words tragic and comic much as they are employed in modern times; calling Homer a "tragic poet," because he is highly dramatic in the mournful passages of his poems. Aristotle analyzes the principles of tragedy as one depart-

ment of dramatic composition. The Romans introduced the more modern designation for tragedy of the high-heeled boot, or buskin, which tragic actors wore to increase their stature.

It is in the tragic of the acted drama that the connection between expression in the histrionic art, and in the arts of sculpture and painting, becomes most apparent. In early Grecian dramatic performances, as in modern Chinese theatricals, pantomime, or sign language, played an important part. As the living actor assumed attitudes and looks expressive of grief and anguish that spoke without uttered language, so the same attitudes and expressions cut in marble or pictured on the tablet gave to dead stone and wood an impressive voice. The Laocoon and Niobe in Grecian sculpture, and the Iphigenia in Grecian painting, silent, yet eloquent in their "voiceless woe," are monuments of the power which art possesses to appeal to our impression of the tragic.

SECT. 8. THE COMIC; BEAUTY IN DISTORTED FORMS AND INCONGRUOUS RELATIONS, ACCOMPANIED BY HUMAN PASSION OR ACTION, AWAKENING MIRTHFUL EMOTIONS.

The Comic, properly the opposite of the Tragic, suggests the idea of smallness and meanness, rather than grandeur; linking with this the emotion opposite to that of sorrow. Ancient and modern authors have carefully analyzed the principles which in their combination produce the Comic. *Mirthfulness* is a generic word expressive of the nature in us susceptible of being moved by anything ludicrous; *the ludicrous* is the object fitted to act upon this nature; while *humor* is the active power of producing mirth. Humor produces its impression by acts as well as words; wit always by sentiment expressed in language. Burlesque is the presenting in a ludicrous light of objects calculated to excite mirth; the risible is a similar presentation leading beyond mirth to open laughter; and the ridiculous is a similar presentation awakening shame or contempt as well as mirth. Wit accomplishes its aim by a mere play upon words, as puns and riddles; by the ludicrous presentation of some common idea or opinion awakening mirth in burlesque; by showing up in a ridiculous light some common habit or custom in satire; and by holding up to derision and popular indignation some individual opinion in irony, or some personal characteristic in sarcasm. The *comic* is the combination of the ludicrous addressing the eye, and of wit addressing the ear; and it is the expression of human passion and action implying the utterance of sentiment accompanied by gestures and attitudes. The *droli*

is the semblance of the comic; as in the imitation of human passions and actions by a monkey that has neither reason nor sensibility.

The oldest of poets are among the richest contributors to the treasures of the comic in literature. No more chastened and playful irony, trying as his circumstances were, can be found, than in Job's replies to his "comforters;" and no more effective and withering satire, sacred though the theme is, can be imagined than Isaiah's pictures of the absurdity of idol-worship.[1] The Battle of the Frogs and Mice, shows that Homer was a master in the field of the comic; as the Iliad proves him to have been in the field of the tragic. Aristophanes, the great writer and stage manager of comedy, brought down what Homer had exalted, by introducing a low scurrility into his wit, and employing satire to assail the champion of virtue as well as the pander to vice. Among the Greek philosophers Aristotle admirably analyzed the subject of comedy, both as to its nature and its effect; saying "Comedy is a sportive imitation of common foibles; not, however, directed against every vice, but a laughable exhibition of that which is base;" for, as he has elsewhere said, "vice is not to be met by reproach, but by ridicule." Among Roman critics Cicero described the different classes of wit, and showed their proper use by the orator; Quinctilian distinguished between the risible and the derisive; and Horace made this nice discrimination: "In matters of moment ridicule cuts with far more power and effect than severity." It marks Shakespeare as the great dramatist of modern times that he comprehended fully the spirit and the mission of both tragedy and comedy, and could as a master execute what as a genius he conceived.

Aristotle's definition of the ridiculous, aids the mind in passing from the comic as addressing the ear in poetry and song, to the comic in forms addressing the eye in sculpture and painting. He says: "The ridiculous represents any frailty or disgrace not causing pain or danger; as, for example, a countenance ugly or disfigured, but not occasioning pain, is ridiculous." As the comic actor on the stage, by assuming such an expression of countenance, or by putting on, as was oftenest done, a comic mask, accomplished more than by his words the effect he desired, so the artist could embody comic expression in marble and on canvas. As there were artists to carve and paint Achilles and Agamemnon, so there were true masters in art who "recreated themselves," as Pliny says, "with comic

[1] Job xii. 2; Isaiah xliv. 9–17.

subjects amid tragedy;" as Homer relieved painfully pleasing sympathy for Achilles and Briseis with the ludicrous appearance of the shallow-pated Thersites. As we shall see the comic in art is a golden thread gossamer-like in breadth in the classic Grecian age, a silver band of broader dimensions begirting the astute Roman era, a glitter of universally pervading brass in Mediæval times, while it has often been the very warp of the web in the painting and sculpture, as well as in the literature of Germany, the Netherlands, and the British Isles. The comic should doubtless be second to the tragic in art, as in letters.

CHAPTER VII.

THE INFLUENCE OF NATURAL CHARACTERISTICS AND OF DEGREES OF CULTURE IN MODIFYING THE IMPRESSIONS PRODUCED BY ART.

The idea, common to mankind, that superior knowledge and skill in any department are above ordinary apprehension, and therefore beyond general attainment, seems to cling to the human mind when art is regarded; though increasing general intelligence has long since exploded this vulgar impression as to science. From time immemorial the superior race of India have been a caste bound not simply by the ties of race, but by the bonds of oaths none dare violate, never to divulge the secret principles of science on which their arts are practised; and as their science seems to the people supernatural, so their arts seem magical. Pythagoras, not sufficiently realizing the distinction of races, having learned the science of this caste in Egypt, thought to introduce into Greece a similar caste, holding their esoteric doctrines as a mystical science and as a magic art. But he mistook entirely the spirit of the Greek people, the finest European stock of the North and West, so different from the Asiatic of the South and East. Among the Greeks the veil of pretentious mystery was torn off from all science and art; the common people demanded to know the secrets of both; and both alike they discussed, criticized and practised, regarding art no less than science the common heritage of man, just like the air they breathed, and the water they drank. A principle was thus developed most important to be observed in the progress of every age or nation.

Another equally important principle, the necessary counterpart of that just mentioned, was clearly recognized by the Greeks as leaders in true art. While among the thousands of intelligent and cultured youth in a nation all may be able to criticize art, and hundreds if devoted to the pursuit might succeed as artists, yet differing tastes and the varied and numerous wants of man in society call for only a limited class to make art the special business of life. Socrates taught that every man of the common people should think for himself, and learn for himself the true principles of religion, of morals, of political science, of letters and of art; but he by no means taught that every man should or could be a Phidias in sculpture, a Polygnotus in painting, a Pericles in statesmanship, a Plato in philosophy, or a Themistocles in generalship. There are inborn natural characteristics of national and individual mental capacity, and there are degrees of general and special culture, to be remarked in the history of art among men; without the observing of which it is vain to attempt a consideration of the varied tastes that have prevailed, and the wonderfully different success in execution that has marked the people and the artists of different lands and ages.

Sect. 1. The influence of national character and social customs on the sensible impressions produced by Art.

Though man's Creator "made of one blood all nations to dwell on the face of the earth," he has allowed them under the influence of differing race and culture to become separated into "Greek and Jew, barbarian and Scythian, bond and free." Different races and types of mankind are in color, capacity and culture as distinct in all their attainments and in their appreciation of science and art, as if they never sprang from the same pair. As there is a difference in individual mental development which makes it impossible that in the same family one brother should share the power and reach the position and influence of another, as there is a distinction in the mental cast of the sexes showing the Creator's general appointment as to their different though equally important fields of mental employ, and as there is a progress of development in every mind from childhood which may be checked and fixed permanently at any successive stage, so there is a similar originally constituted distinction in mental cast and capacity in races of mankind. In art, palpable to the eye as its productions are, this distinction is perhaps more marked than in any other department of human attainment. One family of mankind have never passed the infancy of human development, and their

art is that of a child; another has never shown anything above mediocre talent in any department, and at that standard their productions for ages have been stereotyped; and yet another has soared at once to the very heights of human attainment. In this latter superior race the climax of national advancement having been reached, progress yet beyond that advancement has been made in other scions of the same stock fed by the accumulated debris of their predecessors in culture. The occasional exceptions to this law, usually capable, as in the progress of art among the Egyptians, of being traced to their source, only show how universally dominant, in the person of rulers or sages of a foreign caste, the descendants of the Caucasian family have been in the whole history of science, philosophy and art.

The history of science and philosophy, illustrated by the monuments of art palpable to the eye, confirms the traditions and recorded history of the elder ages as to the three great families of mankind. The record of Moses represents, that soon after the Deluge the same Divine Being who created man suddenly wrought changes in the language, consequently in the mental and physical caste, of the multiplying race, designed to separate and scatter them on the earth. Ham's family, the third in rank, first developed, occupied the old garden home of mankind, one of the rivers of Eden flowing about their Caucasian abode between the Black and the Caspian Sea; while Nineveh on the Tigris, Sidon, Tyre and Gaza on the Mediterranean, Selah or Petra in Arabia, and Memphis in Egypt were built by them. This race became masters and teachers in science and art; Joseph and Moses learning their wisdom in their schools, and marrying into their superior families; and Pythagoras and Plato resorting to their Colleges. Ancient Asiatic tradition accords with this record; maintaining that the red is the central as well as original man, lord of Asia, the old seat of the first man; that the black or degenerate family gradually moved southward into Africa; while the white or improved race spread northward and westward. Ancient History adds its testimony; Herodotus describing at his visit the Colchians on the East of the Black Sea as of African stock, having curly hair and dark skins; while in Africa itself the widest differences existed between the Egyptians and the Central Ethiopians. The palpable witness of the sculpture and painting of ancient Egypt confirms this view; the perfectly life-like portraits executed not more than five or six centuries after the Flood, proving that the three races were in all their features as distinct in that early day as now. The modern science of language throws interesting light on the same conclusion;

the two leading families, the Shemitic and Indo-European, in their structure and range of words expressive of ideas, showing that the one was made for a stereotyped people stopping in the region of partial thought, while the other never could have been made for any but a people of complete culture and ever advancing philosophy. Above all, and comprehending all, the ethnological view of Guyot illustrates and confirms this view of the division of the human family. The first developed family, that of Ham, physical in its tendency, imitative in intellectual cast, attained an early but limited advancement, soon degenerated and was thrown into the shade by the other later developed races. The second family, that of Shem, imaginative in turn of mind, with the pride of inventive genius and of poetic temperament, boastful of superior ancestry and clinging to its established customs, became crystallized into a beautiful yet fixed and lifeless method in art. The third family, that of Japhet, gifted with both physical energy and intellectual vivacity began a slow but constantly advancing progress, which reached the heights of Grecian art only to aspire after greater excellence in succeeding branches of the same family.

In this higher race, called the "Arian" by Herodotus, originating in the region of the Caucasian mountains, the original home of man in his perfection, and the nursery of the noblest specimens of the human family, the Brahmins of India seem to have been the first developed. Clement, of Alexandria, a Christian Greek, eminent as a scholar about A. D. 150, wrote, "Philosophy first flourished among the barbarians, afterwards among the Greeks. Among those in India are two classes; the Brachmans and Samanæans; the latter of whom are ascetics." Porphyry, about A. D., 250, says: "The political power in India is in the control of a certain race of wise men whom the Greeks call *gymnosophists;* of which there are two sects, the Brahmans and Samanæans." The modern Brahmins of India are a cast distinct in physical and intellectual features from the common people; subtle in logic, and skilled in mysterious arts; having among them nude ascetic devotees corresponding to the gymnosophists, or naked philosophers, of ancient mention, men who are looked up to by the Indians proper as superhuman in origin. Their language, the Sanscrit, is the oldest and most elaborate of the Indo-Germanic tongues, surpassing even the Greek in completeness of structure. In it were written, at a date far back of any Grecian records extant, the Vedas, or *Vidjas;* the word "Vidja," meaning science, serving as an index to their original character as

mere philosophic treatises. When by the common people these came to be regarded as sacred authority, and a system of rationalistic pantheism was drawn out from them, the counterpart of that of modern days, philosophers of the same race appeared, Kapila, Kanada, Gotama, and others, who showed the power of the later Grecian Plato and Aristotle, both in metaphysical analysis, and in the inductive sciences. This race, there is reason to believe, exerted a controlling influence in the earliest periods of history in the schools of Assyria, Egypt, and other lands which became the earliest nurseries of art.

The comprehensive writers of the early age of the Roman emperors, Strabo, Pliny, and the Christian Clement, speak of the Magi of Persia, the Chaldæans of Assyria, and the Brachmans of India, as of the same stock, and associated as the teachers and intellectual leaders in all the ancient nations of renown. Moses, writing 1000 years before Pythagoras, and Daniel living about the age of this early Greek, the one intimate with the wise men of Egypt, the other with the Chaldæans in Babylon, give the same picture of their science and their art; these Hebrews themselves being members and even heads of their colleges.[1] Most of all the fundamental principle of all genuine philosophy, the belief in one great spiritual Author and Ruler of all things, was common to the Brahmin, the Chaldæan, and Persian sages; as is seen plainly by the teaching of the Vedas and the Zendevesta, and by the allusions of Moses, Daniel and Ezra to the belief of Balaam, Nebuchadnezzar, and Cyrus; while also Moses intimates that Pharaoh of Egypt was familiar with the same doctrine.[2] Plato calls the Egyptian Thoth a "barbarian philosopher." Pythagoras, Plato and Democritus are said by Clement to have studied under the Brahmans, the Magi, and the Chaldæans, in Assyria and Egypt; and he adds, "Thales, though a Phœnician by nation, is said to have met with the prophets of the Egyptians; as also Pythagoras studied the mystic philosophy of the Egyptians, Chaldæans, and Magi." Strabo mentions Brahmans of India, even as far west as Spain. Pliny mentions the Brahmans of India, the wise men of Egypt, and the Magi of Persia, as a common class, and teachers of the Greeks and Romans. All these testimonies agree in indicating that in Egypt the influence of this superior race was a

[1] Gen. xli. 8; Exod. vii. 11; Dan. i. 20; ii. 27.

[2] Num. xxiii. 3, 12, 15; Dan. iv. 2, 34; Ezra, i. 2, 3; and Gen. xli. 38; Exod. iii. 14; v. 2.

guide and impulse in the art which so early dawned in that land of Ham.

The fact that foreigners from the earliest time were ruling spirits in Egypt is everywhere apparent in history. Herodotus, as well as Moses,[1] mentions the castes of Egypt, as marked as those of India; consisting of the same classes and manifestly originating in the same distinction of race. The builder of the first great Pyramid, Herodotus states, was hated as a tyrant by his people. When Joseph was in Egypt, a foreign shepherd race had held the throne and had been driven out by a rising of the people.[2] Joseph and Moses, of Hebrew extraction, were exalted to power. Herodotus speaks of the foreigners brought into Egypt at an early day, by Sesostris; and even of the Greeks as at his day, having great influence in one section near the sea. The earliest and most abiding foreign influence seems to have come from India. At a very early day commerce extended to that land; and Solomon, of Israel, whose wisdom is brought into comparison with that of Egypt's wise men, but followed in the wake of a former traffic on the Red Sea, between India and Egypt.[3] The influence of this intercourse on art in Egypt is most apparent to careful students. The fact that the names of articles of luxury, beauty, and amusement imported by Solomon, such as "Sandal wood, peacocks, and apes,"[4] are Sanscrit, has often been observed. It is yet more interesting to note that the names designating works of art introduced by Moses into his Hebrew narratives, names learned by him of the Egyptians, such as "current money," "graven images," "coat of many colors," "girdle," "purple," "dyed goats' hair," "altar horns," "topaz,"[5] are from that same language of this early cultured Japhetic race. A peculiar force is realized in this suggestion, when at this day Brahmins from India, using the Sanscrit in their written incantations, are found to be at Cairo in the capital of Egypt the ruling spirits among people believing in supernatural agencies; while the very name by which these people call a learned foreigner "hakim," the same word used in the Hebrew by Moses for wise men, indicates by the testimony of undying Oriental tradition that they were learned foreigners who received that same designation in ancient times.

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[1] Gen. xliii. 32; xlvi. 34; xlvii. 22; Herodot. B. II.

[2] Gen. xli. 12, 43; xliii. 32; xlvi. 34; Exod. ii. 6, 10.

[3] 1 Kings iv. 30; ix. 16, 26.

[4] 1 Kings x. 12, 22.

[5] Gen. xxiii. 16; xxxi. 19; xxxvii. 3; Exod. xxv. 4; xxvii. 2; xxviii. 4, 17.

In every land as we make our survey we shall trace the rude originals of a native art. That early uncultured native art, where barbarian and African rudeness has been unbroken by the intervention of a higher race has been permanently dwarfed and remained in perpetual infancy. Wherever the proud and hoary Shemitic family has been undisturbed in its changeless ages of history, there stereotyped mediocrity has reigned. Where, however, as in Egypt, art has originated among a family whose popular spiritual notions were as low as the African's in fetish worship of reptiles, and as fixed as the Asiatics in blindness to the harmonies of nature in form and color, we shall find the rudest of all conceptions in art stimulated to their first step in progress by Indian resident artists, prompted to a higher advance by Persian intervention, refined to the farthest possible improvement of which its heavy massiveness was susceptible by the grace of succeeding Grecian genius, and finally ennobled into true grandeur by the all-absorbing and modifying spirit of the imperial Roman. Everywhere, in fact, where Ham has toiled alone we shall find art in its infancy; where Shem has dreamed secluded in petty tribes, or massed in colossal nations, art has advanced to youth's period of half matured imagination; but wherever Japhet has both dreamed and toiled, whether domiciled alone in his native hills and plains, or "dwelling in the tents of Shem," or employing "Ham as his servant," there art has been marked with that progress which claimed for it a place in the analysis of history.

Sect. 2. The general influence of advancing civilization on critical appreciation of art.

The first marks of a nation's, as of an individual's progress, are not seen in the field of the true, or of the beautiful proper; but in that of the good. Science and art are not pursued at first in and for themselves; for nations in their origin, need rather new means of attaining material ends. The general term Civilization includes that combination of results realized among a people who, in their relation to things, and to each other, show a skillful adaptation of means to an end. While the Asiatic's dress, for generations the same in fabric, texture, cut, and hue, is an index of his stereotyped unchangeableness in material, intellectual and moral development, "*progress*" has ever been the European's watchword.

The material advancement of a people soon creates a taste for art proper; which demand foreign or native skill will seek to supply. That skill, once introduced, becomes an educating power, stimulating

the zest and gradually refining and instructing the critical judgment of a people in their innate love of beauty and its creations. In Egypt, no less than four marked stages of progress are observable; that of the early plain unadorned native fondness for massiveness; that of the age when probably through Brahminic influence the rude gorgeous coloring peculiar to that land prevailed; that of Grecian lightness and of expressiveness given to sculptured forms; and of that of Roman elegance apparent in their architecture. The same effect of progress in civilization on critical appreciation of art thus traced in the East is traceable also in the advance of art among European nations. Even the matchless art of Greece, culminating in Rome, had the same rude beginning; and it advanced by stages of progress to its climax of perfection. The evidence of this can be traced by the careful explorer as he passes over the field of its existing monuments; the single collections of Italy are well nigh giving a practical exhibition of it; and even the London Museum might with skill present its microcosm. It is yet more palpable in the progress of the Saxon and German nations; all of whose steps in the progress of art are close down to our own era. Tacitus says of the Germans of his day, "There are found among them silver vases, given as presents to their ambassadors and princes, held in the same low esteem as those which are wrought of clay." Again, of the walls of their houses he writes, "Certain places they more carefully smear with an earth so pure and glistening, that it imitated a painting and the lineaments of colors." And this is the comparatively modern history of art in a land that now boasts its Thorwaldsen in sculpture, and its Albert Durer, Vandyke, and Rubens, in painting. A similar progress may be expected in the history of art in every nation where it has attained to climactic perfection.

While such is the progress of art in a single nation, so like to its development in the childhood, youth and manhood of the individual artist, a higher order of advancement than even this among mankind as a race may be confidently looked for and aimed at by artists and patrons of art. As the individual man grows in general intelligence and learning through childhood, youth, manhood and old age even, and then leaves to his children his intellectual as well as his material accumulations to prove a heritage with which they can begin in advance of his own early starting point; and as one generation of artists acting as the instructors of the next enable the youth of the succeeding age to start with the perfected material, if not the perfected practice of their predecessors, so as nations come to their

climax and die, they leave treasures of material, the collected products of the chisel and brush as well as the written treatises of their predecessors, which enable a succeeding nation to take up the work where it had been left by other minds and hands. It cannot be therefore that there should not be progress in art corresponding to the progress of that civilization whose history has been traced by such minds as that of Guizot.

Sect. 3. The special influence of forms of political organization on the patronage of Art.

The men who devote themselves to the practice of art must have the necessities, and be controlled by the motives of other men. They cannot give their time to employ which does not furnish them a livelihood; nor will men of rare ability enter a profession which does not secure to them a just esteem, and put them in a fitting rank among their fellow-men. The patronage of the artist must be more than private employ in order to accomplish the ends of his art. A work of art in painting, sculpture, or architecture, is like a lecture, a sermon, an enacted drama, an oratorio or an opera; it cannot be afforded either by, or for an individual; since its cost is too great for a private purse, and its mission too wide to allow of its being monopolized by a single devotee. Art must have the public, united in some associated capacity, as its patron, in order to give to it that material and moral support which its success demands. Voluntary associations, clubs and societies of amateurs, may in a measure, but only to a limited extent, meet even the positive necessity of the artist; while, moreover, the limited circle of admirers can never give him that peculiar stimulus, the favor of the people, which the artist like the poet and the orator craves. It is only society in its civil organization that can supply the patronage requisite for art.

There can be no question that the form which the civil government of any country may take will have an important bearing on the character and the efficiency of the patronage which will be extended to men devoted to different departments of liberal culture. Aristotle, with a sufficiently comprehensive analysis, divided in his "Politics" the forms which human governments may take into these four; Monarchy or the rule of one man; Oligarchy or the rule of the few over the many; Democracy or the rule of the whole body of the people; and Aristocracy, combining and perfecting the other three, in the rule of the *best* men. The absolute Monarchy of ancient times is no longer known in any portion of the world where art has

attained a high standard of advancement. Oligarchy or the rule of the few as military chiefs, or as landed proprietors, over the many, the system of old Sparta and of the feudal lords of Christian Europe in the Middle Ages, has now its relics in the nobility of England, as well as in the small sovereignties of Germany and Italy. Democracy proper, in which the people meet as a body both to make and to adjudicate law, a system which subjects not only the individual but any minority however intelligent to the perfectly arbitrary will of a mob misled by demagogues and excited by passion, democracy has had such examples of fearful moment in Athens and France that it cannot soon find advocates for an additional trial. What Aristotle meant by aristocracy is the substantial element of all modern constitutional and representative governments, whether monarchial or republican in form. It is not the recognition of a hereditary class of nobles, popularly called aristocracy, who by right of birth are regarded as entitled to make, adjudicate and execute civil law; but it is the occupation of the offices of trust legislative, judicial and executive, by men selected as the best for their positions. The ideal of Aristotle, though too pure to be fully realized is approximated by several of the limited monarchies of Europe, and still more by the American Union.

The question, "What form of government is most favorable to the patronage of art," is reduced thus practically to this, "Is a republican government of elective and representative office-holders, or a monarchical government with hereditary rulers, the one most favorable to the suggested end?"

There can be no question that a government which fosters the free action of the intellect of the people, affording to genius, however obscure its origin, an open field for the indulgence of its aspirations, must be favorable to the development of a capacity for art. In a despotic government some of the fields to which genius prompts, as that of popular oratory, is greatly restricted. On the other hand, it may be that the stable and liberal patronage which art demands for its highest success will be best secured under governments where offices are life-long positions and the public treasure more under the control of men of leisure and of culture. In Greece the popular character of the government of Athens seemed to call forth among its own citizens and to attract from the most distant provinces the rarest gifts and culture devoted to art; it culminated under Alexander the first monarch of all Greece, whose ambition if not his taste led him to become the liberal patron of art; but its spirit

declined rapidly under the successors of Alexander, who, with less nobleness of nature than the first monarch, were no less ambitious to make art subservient to their personal fame. In Sicyon, during the same ages, however, art flourished in rivalry with democratic Athens though under the despotic sway of a series of so-called "tyrants;" while at a somewhat later period, Rhodes, governed ordinarily by an oligarchy, became the leader of all the Greek cities in art. In Rome it was during the days of the Republic that science, art and letters had their spring; they attained their acme of advance under the first emperor; and then steadily declined, mainly because the imperial ambition prostituted genius to low and selfish ends. In modern Italy the revival and noble advance of art began under the mild aristocratic rule of Tuscany, took wing during the brief reign of republican institutions, and went steadily on to its acme under despotic civil and ecclesiastical jurisdiction. In Germany, the Netherlands, England and America, art has arisen and tends steadily onward and upward in its advance and rise under very varied forms of government. The history of all ages and nations shows at least this; that the liberty of popular institutions has been the early nursery of genius in art; that the mingled stability and scope for individual fame characteristic of governments properly styled aristocratic has given the assurance of support which has brought to perfection the germ stimulated by freedom; while absolute despotism has blighted and withered every bud of promise in the field of the fine arts.

Sect. 4. Special influence of Intellectual progress in Science and Literature on the style of Art.

The term *style*, from the Greek word meaning a column, sometimes supposed to be the same as the *stilus*, or reed-pen, of the Latins, designated among the Greeks the order of arranging the columns of a portico so as to secure beauty and harmony; while the Latin word relates to an order in the words and sentences of a written composition which accomplishes the same end. In the languages of modern Europe, in the countries where art is most cultured as Italy, Germany, France and England, the word style is employed in a general sense, covering both the Greek and Roman applications, and also having an application to all the arts. In painting, sculpture and architecture, as well as in literature, we speak of the style of an age, of a country, or of a school to designate both design and execution; both the character and form of the conceptions embodied

in art and the methods of execution employed by artists. Thus understood, style in art must necessarily have a special connection with the progress of a people in a purely intellectual point of view.

The progress of the human mind in what is properly called intellectual development, relates specially to its increased knowledge of things material and immaterial; including an enlarged acquaintance with the laws of physical agents and of metaphysical analysis, an improved practical skill in using things known and in reaching and turning to profit things before unknown or unavailable; which increased knowledge is attained through science in its varied branches, through philosophy in its several departments, and through logic as a power to wield the acquisitions thus gathered from varied sources. No one can take even a casual survey of the advance of any one nation in these respects and not observe how immediate its bearing on the progress of art.

In Egypt, hoary mother of science as she is justly called, the indications of intimate and extended knowledge of science, as well as of letters, is found by the reliable testimony of historic records on her monuments to have existed 2000 years at least before the Christian era; the head of the great College of On having given his daughter to the Hebrew prime minister[1] during the life of the patriarch Jacob; Moses, the Hebrew lawgiver, before Israel was a nation, having "learned all the wisdom of the Egyptians"[2] at that same centre; while 1000 years later than Moses, Pythagoras and Plato studied in the same schools. During all this period Indian philosophy, as developed in the Vedas and metaphysical systems founded on them, either through Indian teachers, or from a community of views existing between Egyptian, Chaldæan[3] and Indian "wise men," prevailed over native African fetish notions and gave a noble massiveness, though not a chastened purity to Egyptian conceptions in art. A striking illustration of this is found in the common ideas of the Divine Being entertained by Egyptian kings and Assyrian prophets; in their common desert shrines for worship; and in the common knowledge of the metaphysical distinction between the limited Deities of separate nations, and the universally recognized God over all, the "*to ōn*" of the Greeks, for whose incomprehensible nature, indicated by the names "Jehovah, Jove," the Hebrew, Sanscrit, Greek, and Latin, have kindred words.[4] When afterwards

[1] Gen. xli. 45. [2] Acts vii. 22. [3] Dan. ii. 48.
[4] See xx. 11; xli. 16, 32; Exod. iii. 14, 18; iv. 22; v. 2, 8; viii. 8, 19.

Greek influence brought in a leaven of Grecian culture, and still later Roman power coupled with the aim at elegance introduced yet another modifying cause, a two-fold principle of human development was revealed. As the schools of Alexandria proved that foreign teachers could only polish the exterior, but could not transform the substantial material of the Egyptian intellect as developed in Science and Philosophy, so Grecian and Roman artists must build and carve from Egyptian material and after Egyptian ideas, while the grace of true life in sculpture, and the charm of more harmonious coloring in architectural decoration, might meet the assent of native artists, and modify, but not control popular taste. The intellectual improvement of the people brought about by the intellectual advancement of the artists was the measure of the improvement to be expected in art.

The history of the progress of art in one country is its corresponding history in other countries. As we shall see, the successive developments of Greek intellect, first in the epic, then in the drama, then in philosophy, then in oratory, and finally in political science, show that progress in mental and moral philosophy is accompanied by a corresponding cast given to conception and execution in art. In the history of Rome we shall observe, that the age called the Augustan, when philosophy, and oratory, and poetry, both lyric and epic all culminated, was the climactic era of Roman art. In the revival of art in modern Italy we shall remark that intellect, generally and thoroughly awakened, turned, as by a natural common impulse, to every department of science and philosophy; Galileo penetrating the secret law of the organization of the solar system; Columbus resolving the problem of the earth's actual structure; Dante soaring to the very height and fathoming to the very depth of the profound abyss of imaginative poetry; Savonarola carrying to the very extreme the doctrine of freedom of religious thought; the Medici with their literary coadjutors nightly reading Plato's philosophy; all of these masters in different departments of intellectual progress, creating by their united influence an atmosphere throughout Northern Italy, without whose invigorating influence the artists of their age, Giotto and Bruneschelli, succeeded by Lionardo, Raphael, and M. Angelo, could not have grown to their maturity in art. The history of art in Germany, France, England, and America, equally confirms this vital truth; that the important element essential to a nation's progress in true art is the advancement of the intellectual development of a people in science and philosophy.

Sect. 5. The special influence of Moral Refinement on the accessories of Art.

While the character of art as to its style, including the elements which make up life and expression, depends on intellectual culture, the accessories of art, such for instance as the dress of the human figure, will be determined mainly by moral considerations. When the original parents of the human family had become morally debased, the first indication outwardly of the inward moral change that had been wrought in them was their assuming a dress. In that first robing of the human form, suggestions of beauty and utility guided them as to material and form; prompting them *first* to the tasteful interweaving of delicate fig leaves as a simple veil for their nakedness, and *then* to the close, thick wrapping of animal furs as a protection from cold.[1] The question, however, whether any covering at all should be placed over their persons, and if so, what portions should be covered, was suggested and decided on moral grounds. Writers on art have generally agreed in confining their notices of the ethical bearings of art, so far as questions of pure morality as contrasted with immorality are concerned, to the discussion of the propriety of nude representations of the human figure. The influence that works of art may have on individual and social virtue, and the influence they may have in culturing patriotic and charitable sentiment, belong to another subject of consideration.

So far as nudity of figure in living beings is concerned, there is no question that climate has more to do with establishing custom than any preconceived notions of morality. In every civilized and Christian community there is in the dress of summer a far greater exposure of the person than in that of winter; and even in winter a similar disrobing of the person seems appropriate when in the heated halls where fashion is gathered at an evening reception, artificial heat turns winter into summer as artificial light turns night into day. Irrespective entirely of religion or race warm climates justify entire nudity under circumstances calling for it; the traveler seeing alike in Southern Italy, in Western Asia, and in northern Africa groups of females bathing in open view of passers by, without any more thought of impropriety than has the native Congo female in appearing entirely destitute at all times of raiment. It is less, then, a question of moral propriety than some might suppose that deter-

[1] Gen. iii. 7, 21.

mines the covering or exposing of the human figure in the living person.

In its application to art this question becomes however, more manifestly one of moral propriety, yet actually controlled by another principle. Among all the works of the Creator no form is so exquisite, no color so delicate, and no entire figure such a model of beauty, as that found in the human frame, both male and female; and that alike in childhood, youth and maturity. It cannot be conceived that the Creator designed this form should be forever hidden from the eye made to admire beauty or that to copy its perfect outline can be opposed to His will. Hence everywhere that dress is most admired for its intrinsic beauty which most brings out and least hides the contour of the entire form. It is this that makes the close locked Roman and mediæval armor, the tight drawn bodice and narrow chemise of the oriental maiden, as well as the thin robe of the early Grecian and Roman matron, seem the perfection of dress; since they serve but as a transparent veil, setting forth the beauty of the figure. It was this principle that very early prompted the Greek artists to so general a study and representation of the nude in art as to call forth Pliny's remark, "Græca res est nihil velare;" the Grecian style is to drape no figure.

The deep conviction of the most spiritual of poets, philosophers and artists, men of the highest tone of private virtue and of the devoutest sentiment, seem to have agreed that true and deep-seated morality is nurtured, instead of being vitiated, by ideals of the male and female form presenting the entire human figure in its nobleness and loveliness. Thus Milton picturing Adam and Eve seen by angels and by Satan in their native beauty of form breaks forth in censure of that spirit which would hide from the study of art this only perfect model; exclaiming

> "*Dishonest* shame
> Of Nature's works, honor dishonorable,
> Sin-bred, how have ye troubled all mankind,
> With shows instead, *mere* shows of *seeming* pure."

The profound metaphysician and pure moralist Cousin says, "It is the property of beauty not to irritate and inflame desire, but to purify and ennoble it. The more beautiful a woman is, the more, at the sight of this noble creature, is desire tempered by an exquisite and delicate sentiment; and is sometimes even displayed by a disinterested worship. If the Venus of the Capitol, or the St. Cecilia,

excite in you sensual desires you are not made to feel the beautiful." Thus it is, yet again, that the most admired of all works of American sculpture, in the country where notions differing from those prevalent in Europe have been supposed to prevail on the question at issue, is the Greek slave of the modest, sensitively chaste and humbly devout Powers.

It is worthy of constant notice that questions of truth, beauty and goodness always go hand in hand. To know the *truth* for the sake of *utility* the human frame must be studied, with drawings of the nude figure and indeed from actual subjects; a study acknowledged to be, not only for the trained physician, but also for the educated youth of both sexes, both legitimate and productive of the highest sentiment of reverence for this wondrous work of the Creator and of sacred obligation to be true to the trust imposed by its committal to our care. As the study of this master-piece for truth's sake has proved thus favorable to morality, so has the same study for beauty's sake proved. The purest and truest idea and practice of conjugal fidelity prevails among the rudest African tribes where apparel for either sex is unknown; while, too, since extremes always meet, the highest tone of morality always prevails where under the influence of cultured taste in art young men and young women can together admire such works as the Venus de Medici and the Apollo Belvidere, the Greek Slave of Powers and the Washington of Greenough. Yet more, while the ancient Greeks, according to Plato's statement, embodied their ideas of the primitive human being in one form that combined the perfections of both sexes, mingling transcendent purity with matchless beauty in the *andrigune* or man-woman, the Christian in deciding the same question which early Greek artists thus settled, is guided by a higher philosophy as well as by a Divine Revelation. He worships, in Nature and in Revelation, God the Father who made man and woman both in their original state and in their restoration by His redemption, to possess that purity of heart which subordinates the fleshly nature to the love of true beauty; as Chrysostom, the eloquent Greek orator of early Christian times urged in commending Christianity to his artistic countrymen.[1] Yet more, the Christian adores that Redeemer who in perfection of form and character was so completely the representative of universal humanity that no thought of his sex ever arises to the mind of His adorers; while

[1] Chrysostom Homily on 2 Cor. iii. 18.

nevertheless he is "fairer than the sons of men," and "the one altogether lovely."[1]

Sect. 6. The special influence of Religious Culture on the subjects of Art.

The chosen subjects of art, both in the earlier and later stages of its advance, have been controlled by the spirit of religion. Pliny's statement that "the first statues made were images of the gods" is true of other arts than sculpture. Among rude African, Asiatic, and American tribes, where sculpture, architecture, and other arts never have passed beyond their infancy, all art is exhausted on images and shrines for deities; and in the progress of art in Western Asia, till it culminated in Greece, the highest efforts in every department were consecrated to religion. It is only under Christianity that the fact becomes a theme for special consideration, that Religious Culture determines the subjects of art.

The Old Testament taught that there is one God, whom no man hath seen or can see; and it forbade that man make any graven image or likeness of anything in Heaven or earth to which in religious reverence he should bow down, and which in religious devotion he should serve.[2] Yet the whole ceremonial service of the people living under the Old Testament was by Divine appointment made impressive through images wrought by the art of man addressing the eye; and even Deity himself made His presence known in the pillar of cloud and fire, and especially by the light of the Shekinah on the mercy seat, which like the flame in the bush seen by Moses, fed upon nothing and yet was never dimmed.[3] The religion of the New Testament taught that God is a spirit, and that they who worship Him, should worship Him in spirit and in truth. Yet this purest of all spiritual systems has its two ordinances of baptism and the supper, meant to impress the eye; as well as its reading, singing and prayer in gathered assemblies which speak through the ear to the mind and heart. Most of all it tells us that no man can approach unto God, except through the Mediator, the man Christ Jesus;[4] the human form seen by the eye or conceived by the imagination aiding our approach and our address to Him.

It seems but a step in the same direction, a legitimate and necessary conclusion from a connected series of facts revealed in the New

[1] Psal. xlv. 2; Cant. v. 16.
[2] Exod. xx. 4, 5.
[3] Exod. xiii. 21; xxv. 22; xxxiii. 9; Psal. xcix. 6, 7.
[4] John i. 18; xiv. 6; 1 Tim. ii. 5.

Testament and established in experience, when it is inferred that art is necessarily associated with spiritual Christianity; and, indeed, when it is conceived that true art is designed to have its highest development and climax of perfection in the advance and triumph of the truth and grace which in their fulness belong to the pure religion of Jesus Christ. The fact that by their art-culture the Greeks were prepared for a religion of such matchless harmony and beauty as the Christian system is conclusive on this point. It would be a contradiction to conclude that if art-culture had power to attract the Greeks to the truth as it is in Jesus, when the Jews with the Old Testament prophecies were not thus attracted, that art was opposed to the spirit of the religion of Christ. Paul's expression is more than a figure of speech when he alludes to the harmony of the pipe and harp in the orchestra, as the type of that harmony which should exist in the Christian Church; and when he again pictures the artist before a mirror chiseling the hard stone by slow and painful labor into the image of his model, making this the type of the self-moulding which the Christian must perseveringly follow in order to attain the likeness of Christ, his example.[1] The perfection of Art is really to be an aid to man in attaining the perfection of his moral nature.

It is especially to be observed in forming a judgment as to the place which plastic art should occupy under the Christian religion that all other forms of art than the plastic have their most legitimate and necessary employ, and their very highest development in connection with Christian worship. Music was never so hallowed as when Jesus sang a hymn[2] with his disciples just before the trying crisis of his crucifixion; it was never so grand as in the pealing chorus of a thousand Christian voices shouting their enthusiastic hymns of praise to their Redeemer; and it was never so sublime as in the sacred oratorios of Handel and Mozart. Poetry, too, never reached such a lofty strain as in the drama of Job, in the lyrics of David, and in the epic of Isaiah and Habakkuk; and if the true genius of ancient Poesy lingers yet on earth, it is in the souls of such men as Dante and Tasso, of Goethe and Schiller, of Milton and Moore, when, stirred by the fervor of Christian devotion, they have poured forth those Christian melodies which will outlive even Homer's Muse. Most of all, the histrionic art, yet more akin to the plastic arts, never has had such masters as in the department of

[1] 1 Cor. xiv. 7; 2 Cor. iii. 18. [2] Mark xiv. 26.

sacred eloquence; Longinus,[1] the great Greek rhetorician, as we have seen, placing "Paul the Tarsian" before even Æschines and Demosthenes as excelling in "unstudied" oratory; while the long line of pulpit orators from Chrysostom, the "golden-mouthed," have ever most fully brought out the power of histrionic genius.

There are three classes of subjects upon which art naturally seeks to exert its power; and the question whether the highest perfection in art is not to be reached where Christianity holds sway will depend on the demand for its culture made by a Christian people in the three departments which the Arts of Design seek to supply. The common utensils of life, not to say the costlier and artificial adornments of human aspiration, will call forth art as a natural and spontaneous gift from either the savage or civilized man; and certainly amid Christian civilization the culture of art in this department has always witnessed a quickened, never a deadened growth. Even among the adherents of that view of the Christian system which sets aside the two Church ordinances as too carnal for a spiritual religion, it is only unartistic and tawdry ornament in dress, furniture and equipage that is rejected. In fact the most striking characteristic of this class of Christian believers is a true, a cultured, a specially chastened art-taste; which is the more apparent as inseparable from human nature when thus witnessed in its simplicity and purity in this sect most opposed to forms and adornments.

In its second department the Arts of Design seek to preserve and perpetuate the features of those whom we would keep in memory when absent. The same spirit which draws men or women to the toilet-table and mirror for the adornment of their own persons that they may be acceptable to present friends, prompts in man or woman the wish to preserve that same form in a likeness for distant and even unborn kindred to look upon. Hence even the uncultured Indian hands down his memory in some rude relic of his own use on earth, or in some rough carving made by his own hand, which shall bring his person or character to remembrance when he is gone. In advancing society, the outline profile, the crayon sketch, the portrait or the bust, the funeral pile and monumental shaft, are man's instinctively sought draft upon art to minister to a universal human desire. The effect of Christianity is not to restrict but to give the fullest possible exercise to this ambition. There are no such aspi-

[1] Book I. Chap. iii. Sect. 6.

rants for relics, for family portraits, and for adorned burial-grounds as a Christian people.

In its third department under Christian civilization, the aid of art is instinctively sought as a helper in the accompaniments essential to Christian worship. In the rudest age and among the most scrupulous opposers of forms and rituals there will be seen a demand, which no community can resist, that the house for Christian worship keep pace with, if it do not outstrip in symmetry and elegance the private mansions that surround it. The singing of sacred hymns by an irresistible influence takes on more and more of artistic culture; and it adds an orchestra, at first simple, but growingly elaborate. The furniture and adornments of the pulpit, the choir, the altar and the communion-table, assume a constantly increasing costliness of finish. And indeed the observing student that has visited the mosques of Oriental Mohammedism, the synagogues of ancient Judaism, and even the temples of the most formal and sensual heathenism, returns to observe the fact everywhere pressing itself on his notice in Christian lands, that plastic art never has been called forth in such profusion of subjects and in such chastened beauty and sublimity of conception and execution as in the accompaniments of Christian worship; the most truly spiritual religious service known on earth.

The most difficult and the deeper question for the Art critic and Christian philosopher to discuss and to settle together is the propriety of representations in sculpture and painting of the man Christ Jesus; the Being on whom the Christian's faith and hope rest, and to whom his devotion and service are due. That the persons of apostles and martyrs should be subjects for art representation seems as natural and legitimate as that the likenesses of ancestry should be sought and prized; and doubtless the influence for good which the memory of a spiritual father and example exerts is more mighty than that of many a parent in the flesh. The fact that no Grecian limner, sculptor or painter of Christ's age, and no inspired historian of his life though familiar with his person, has left in marble or on canvass his form or features, or has even given the least hint by which a single lineament of either can be traced, is most instructive in many respects; but they manifestly err who take it as an indication that no ideal of his person may be legitimately conceived and executed with the pencil, the chisel, or the brush. It was not designed that Jesus should be the representative of one family, nation, age, sex, class, condition, or type of mankind; that he should be recognized as Asiatic or European, as Jew or Greek, Roman or Scythian, as a man

of ancient or modern times, as of civic or rustic aspect, as of reflective or practical mental cast, as of mild or stern disposition, or as of sanguine or retiring temperament. In fact through females in the line of his descent, such as Rahab, Ruth, Bathsheba, and European wives of Jewish princes after the Babylonish captivity, the blood of all the races, Shem, Ham and Japhet, mingled in his veins.[1] He was made indeed "in all points like as we," *i. e.* as the race "are;" an embodiment of universal humanity; and however varied therefore the ideal which men may form of him, each is right if so be an intelligent and devout spirit guide the conception. Moreover, every Christian does and must, especially in prayer, form in conception his or her own image of the man Christ Jesus who is approached; and there can be no legitimate objection suggested to the artist's choosing as a study for the chisel or brush his own ideal of that Being he adores. On the other hand, the highest attainments in pure adoration and in true devotion, have been reached by those in whom the sentiment of veneration and consecration has embodied itself in a creation of art.

The view here presented seems to have been substantially that taken by men of the most intelligent mind and evangelical spirit in the earliest days of the history of Christianity; and a well-balanced understanding and devout heart must now, as in every age, accord with its decision. Thus Augustine, living in the fourth century, and a man whose religious experience next after that of Paul the Apostle is the most instructive in history, thus writes:[2] "What was his personal appearance we are entirely ignorant. For the features of the Lord's fleshly nature are varied and sculptured according to the innumerable diversity of individual conceptions; which nevertheless were one, whatever they were." This statement intimates what will be fully confirmed,[3] that very varied representations of Jesus' personal form and features had been conceived and executed by artists in the early days of Augustine; and that their creation was rather commended than censured by the evangelical spirit of that age.

The main characteristic distinguishing modern from ancient art, as we shall farther observe,[4] is the radical change in subjects introduced by the Christian Revelation. In the secular and social demands of human life in society, the forms of art are everywhere

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[1] See Matthew's Genealogy, Chap. 1st. [2] Augustine de Trinitate, VIII. 4.
[3] See Book III., Chap. 4, Sect. 2. [4] See Book III., Chap. 4, Sect. 1.

the same in nature; but in all the Arts of Design proper, it is the spirit of religion that gives themes, and thus forms, for execution. It should be specially remembered, that true art always tends to spiritual conceptions; a fact as manifest in the best days of Greece, as it is in modern Christian times. As Jarves has well remarked, "The works of Raphael, as those of Phidias, never have been worshipped . . . It is ugly and hideous associations that have always led to error and idolatry."

SECT. 7. SPECIAL MEANS OF IMPROVING POPULAR TASTE, AND OF DEVELOPING AND SUSTAINING GENIUS IN ART.

In order that advancement be made in Art, means must be used directly to secure this end, such as all experience shows are required in the advancement of any Science or mechanical trade. These means must have two objects in view, one relating to the people, another to artists; the first awakening a popular taste for art; the second calling out and nurturing genius for art, and especially providing for the encouragement and support of artists, that they may devote themselves to the pursuit for which they are specially fitted, and may thus feed the popular taste.

The first of these ends may be sought through Collections, Lectures, and Libraries. The Remesium of ancient Thebes in Egypt, the Acropolis of Athens and of Corinth, the Agora of Rhodes and of Sicyon in Greece and the Museum of Alexandria, were pre-eminently treasure-houses of sculpture and painting; the Romans, like the English, were pre-eminently devoted to the collection of works of art; while the galleries of almost every nation of modern Europe show by their attractive influence on the popular mind that the gallery is the indispensable first means for awakening a taste for art. Lectures are not specially an American institution; for Socrates, Plato, Cicero, and even Hypatia, lectured publicly on art as well as on philosophy; and the resort of the Medici in their effort to revive art, of the French of modern times, whose experience is illustrated in M. Cousin who recommends popular lectures to give a spring to a higher taste even among the silk weavers of Lyons, the world's history, in fact, shows that the Lecture is not only specially adapted to a new country little provided with books, but also necessary for every people whose time during the day must be occupied in pursuits essential to secure a livelihood. Last of all, Libraries, which shall at least give to men of leisure, to instructors and to public lecturers the sources of information are requisite; as the history of the

Libraries of Pergamos, of Alexandria, and of many a modern city show.

The second end has received, and may yet receive aid from several sources; some of them originating in Society as an entire body, and others in the associations of artists themselves. The elementary teaching of art in common schools was in Greece the leading means of developing in early life the nascent genius which was common to all, but which was eminent in very few youth. Next special schools for artists are of great avail: for, though Art, like any learned profession, as Law, Medicine, or Theology, may be learned under a single practitioner, it is acquired at a greater waste of time and of energy; as the lives of the great painters of ancient Greece, as well as of modern Europe, will be found strikingly to intimate. Public patronage, finally, on the part of organized Society is essential to the artist; for it is only works of lesser merit, such as portraits, that are ordinarily demanded by private patrons; while all great works requiring breadth of conception and finish of execution, require an outlay which only the public purse can meet. The saddest pages in the history of art are the records fearfully numerous of young artists of fairest promise, dwarfed by compelled devotion to unworthy themes, or lost to art by necessary diversion to other pursuits.

The artists owe themselves a duty in their professional associations. Every college student knows the power of literary association to give impulse, nerve, and culture in the use of the pen and voice; and the English clubs of Johnson's day show the power of mutual attrition and stimulation in creating a galaxy of great men. Men devoted to science unite to publish and bring to popular notice their discoveries; and artists need have no greater modesty in heralding their triumphs. Inventors combine in demanding special legislation by which to secure to themselves the emolument accruing from their own skill; and artists, who, like Van Eyck, reach by years of careful experiment new methods of employing material, are no less entitled to a patent for their inventions. The association of artists gathered about the Medici attained a philosophic comprehension in design, and a power in execution, which have been the wonder of the world; an example still instructive.

Sect. 8. The Nature of Art-Study and the Place it should take in a course of Liberal Education.

Education in Art is needed for two classes of youth; those of select

genius who are to be artists, and the general student who ought to be an art-critic. Some, like Giotto and West, are born to an intuitive power of conception and a suggestive skill in execution, which enables them without study to draw, mould, or color with surprising skill. Others as Socrates, Winckelmann, and Kames are gifted with critical judgment and logical power of thought and expression which makes them surpass the artist in conception and suggestion so as to be his instructors in design and his critics in execution; but who fail in every effort to put their own theories into practice. The studies requisite for these two classes are in theory, in elementary principle, the same; as the study of anatomy for youth designed for the legal, clerical and medical professions is the same. The consideration of these elementary principles of Art belongs to the field of Art Criticism; the after study of the Professional School fills volumes of detail and years of practice.

The three main sources of elementary Art Education are studies of nature, of works of art, and of text books; a careful notice of which gives clearness and order in considering the principles most important to the artist and art-critic. The study of Nature embraces three departments; *first*, material creations, inorganic as rocks, clouds and mountains, and organic as plants and animal forms; *second*, spiritual beings and their attributes, embracing man in all his variety of character and action; and *third*, since both the previous classes are but effects, the study of causes prior and superior to all finite material and spiritual existence, embracing especially the contemplation of the great First Cause, the Divine Author of all. The study of works of art, again, involves not only the employ of the eye on preserved works of antiquity and on present collections, but the reconstruction before the mind's eye of what history describes in words; in which study the art-critic may search only for principles, while the artist must scan and guess that he may attain methods of execution. The study of Text Books, yet again, embraces the wise selection of books and the successful order of topics examined.

The study of nature is the study of the *true;* the examination of things and phenomena as they are, that the artist may copy them and the critic judge of his accuracy. The transition from Egyptian to Grecian sculpture seemed an inspiration, because when Dædalus the early Greek sculptor wished to make a Hercules or a hero, he stripped a brawny peasant to his skin, and trained him to the bend of limb, the strain of muscle and the position of features which mark action and passion. Painting seemed in the revival of art in Italy

to be angel touches because Giotto as a shepherd-boy loved to draw his own sheep, because Lionardo would thread a crowd for weeks to select a face of miserly sordidness that might give him a Judas, and because Raphael drew his sweetest Mary with the babe Jesus on the head of a wine cask as he gazed on the unstudied attitude and unconscious expression of maternity seen in a simple peasant woman nursing her child. The truly admirable feature of Ruskin's popular works on art, urging constantly the importance of viewing objects *as they are*, not in an artificial light and with a spirit of affected enthusiasm, is embodied in this paragraph.[1] "The chief aim and bent of my system is to obtain, first, a perfectly patient, and to the utmost of the pupil's power, a delicate method of work; such as may ensure his *seeing truly*. For I am nearly convinced that when once we see keenly enough there is very little difficulty in drawing what we see; but even supposing this difficulty to be still great, I believe that the sight is a more important thing than the drawing; and I would rather teach drawing that my pupils may learn to love Nature than to teach the looking at Nature that they may learn to draw. It is surely, also, a more important thing for young people and unprofessional students to know how to appreciate the art of others than to gain much power in art themselves."

Moreover, what we call *human nature* is a study equally important in art as in any one of what are called the learned professions. The people, mankind at large, have their intuitions that are right, and their prejudices which may be wrong; and the artist, as truly as the lawyer, the physician, and the clergyman, will fail of satisfying his masters and patrons, the public, who does not study to harmonize with popular convictions, and to correct by guiding, rather than opposing them, popular prejudices. Because Apelles paid just respect to the people's judgment by placing his finished pictures in the window of his studio and listening to and following out their correct criticisms, after he had put in the extra stitch in the sandal which the cobbler's experience suggested, he could make bold, when the cobbler criticized the anatomy of the ankle, to reply before an exacting Athenian populace, "Let the cobbler stick to his last." When the mulish obstinacy of the Egyptian race compelled their own artists to cramp all promptings of improvement on the orthodox pattern of their statues and temples, it was the true spirit of Art which prompted Grecian artists under the Ptolemies to rear and

[1] Ruskin's "Elements of Drawing."

adorn a purely Egyptian temple at Philæ, with nevertheless such a charm of grace thrown over it that to this day the rude Nubians call it "*Es-soor-el-Anas el-Wogood*," the palace of beautiful aspect. The artist who arrays himself against popular opinions is as truly opposing nature as he who should set at defiance the laws of gravity. On the other hand, the true master on life's stormy ocean, controls the inconstant and obstinate sea by humoring the gale; while at the same time he firmly breasts the billows and pursues his own chosen path. This study of human nature, a worthy regard to the real interests of men, which cannot be secured by one out of sympathy with his fellow-men, the special lack perhaps of artists as a class, is nothing else than the effort to attain the *good;* which is in its genuine, and its highest sense too, the adaptation of men and of things to each other.

The study of Nature, again, is the study of its *Author*. The artist who thinks to copy nature without any knowledge of its Creator is at the disadvantage of one who should attempt to copy a picture of Raphael without first studying the man. Socrates and Plato were laying the foundation on which the whole superstructure of Grecian art rested when they constantly drew the contemplation of their pupils above the works of man and of God, up to that great Author of all that is true, beautiful, good and right. The wondrous power of the great masters of Italy in their own and subsequent ages has been the religious spirit that pervades their works. Human nature always has demanded, and, because man was made to adore and serve his Maker, it always will demand that the artist, as truly as other public men, respect their religious opinions. Moreover, as Cicero said, "that no man can be a successful orator unless he is a good man," so with truth it may be added "that no artist can be great who is not a religious man;" having an aim in his study and toil higher even than the true, the beautiful, and the good; making, indeed, personal righteousness the attainment loftiest in his thought, and most absorbing in his efforts.

The history of the several arts will abundantly illustrate how the study of the *works of art* produced by other nations gave the first spring successively to Grecian, Roman, Italian, German, French, and English art. The discovery of a gold mine has had little present, and no permanent interest to be compared with that of the exhuming of a buried statue. It is in the relics of Grecian and Roman Sculpture and Architecture, that the antiquarian reconstructs in fragments the art of the past; while the genuine artist, from the same, builds a purer and nobler structure in his own age. The study

of Grecian Painting, peerless in excellence, can only be learned. however, from books; for its relics have mouldered and faded till but a shadow remains. The student of art, however, may thread even this more difficult gallery of antiquity, and restore many of its treasures. The maxim that "history is philosophy teaching by example," is nowhere truer than in the field of Art.

As to the place which should be assigned in a course of liberal education to the study of Art, Lord Kames has offered a suggestion, which, with some modification, may be of value as a guide. He thinks the science of Criticism, in which he includes the study of Art, should form a "middle link" between the "years spent in acquiring languages," and those devoted to "profound philosophy;" and that for two reasons. First, its subject as relating to "invention," is intermediate between language which taxes the memory, and "abstract science," which calls into play the reasoning faculties. Again, its study is a disguised and fascinating introduction to the study of science proper; for those "who apply to the arts" are unconsciously "led on step by step;" the principles of science opening gradually upon the pupil's mind. This doubtless is true of the study of Criticism as applicable to Literature, which includes Rhetoric; to which Department of Criticism most of Lord Kames' book is devoted. It is doubtless true, also, of the practical acquisition of skill in art-execution; whether it be in drawing, moulding, or coloring; the pupil should be set to the practice before he is master of the theory. When, however, the design of the study, like that of the Mathematics, Physics, Mechanics, etc., taught in schools and colleges, is not to make a practitioner in any of these departments, but to furnish a general survey of the entire field of human attainment in art, then doubtless the study of Art Criticism must come later into a course of liberal study. It cannot well precede the study of Chemistry, of Optics, of Descriptive Geometry, and of the other branches of a Mathematical and Scientific course; for it will be found to demand to a certain extent a previous knowledge of them all. Nor can it well precede, though it may accompany the study of Mental, Moral, and Political Philosophy; since some of the hinging principles which have determined the progress and perfection of each of the arts have turned upon some fundamental question of taste, of ethics, of national character, or even of civil polity. The study can probably be most successfully pursued during the closing year of the course usually fixed for higher seminaries of learning.

BOOK II.

DRAWING; THE REPRESENTING OF FORMS ON A PLANE SURFACE.

DRAWING is the first of the plastic arts to be acquired; as experience and history alike indicate. The first amusement of the child in developing taste is drawing; and white walls and bits of paper are covered with juvenile first lessons. The tombs of Egypt, which date back before Abraham's day, are covered with drawing, sculpture, and painting; the artist's first work, being figures drawn in outline. The Book of Job, the earliest written record, alludes to drawings, or inscriptions "graven with a pen of iron and lead in the rock."[1]

It is a just view taken by Peale, the intelligent American artist, in his book called "Graphics," that writing with the pen, or style, is but a branch of drawing. It is a striking proof of the natural love of art, that the child prefers to try his originating skill in the pastime of drawing according to his own fancy before he will consent to confine himself to the slavish toil of copying letters of fixed shape and size. The love of conceiving and executing new forms of beauty constitutes the Art-spirit in our nature; and the first attempt at making letters, as also any new effort to make them of more beautiful form, is truly an art exercise.

In the practical execution of any single work in Drawing the order of the theoretical study of the Art is hinted. The master first traces the outline of a principal figure; he next adds a background of subordinate figures, or of landscape; if called for by the times, or by true taste, his sketch is multiplied in engraved copies; or the quick and cheap penciling and graving of the sun's rays takes the place of the hand, though not of the mind of the artist; while the climactic attainment of the artist in all this work is the power of Design. Plane and Perspective Drawing, Engraving, Photographing and Design, are, therefore, the leading studies in this department of Art.

[1] Job xix. 24.

CHAPTER I.

PLANE DRAWING; THE REPRESENTING OF FORMS AS LOCATED IN A SINGLE PLANE.

PLANE drawing is the representing by lines of the form of an object, as its outline would appear falling upon a white wall or a fixed plane surface behind the object. It is sometimes called "Geometrical Drawing," because the figures are drawn as in Geometry in their real proportions; and not in the apparent proportions of the different parts of the same object, or of several objects, when viewed at different distances from the eye. As distinguished from drawing in perspective, plane drawing is the representing one instead of many objects; and it is the delineation of that one object as if all its parts lay in one plane at the same distance from the eye, and not in different planes one back of the other, as the parts of the object are back of each other.

SECT. 1. LINES AS THE ELEMENTS OF DRAWING.

The elements of drawing are lines either straight or curved. Every drawing or engraving, however elaborate, is composed of lines, straight or curved, longer or shorter, united in various combinations. The outline in all drawing is in straight or curved lines; and the shading however executed is made up of combinations of straight lines or dots.

The first lessons in drawing are in straight lines. Three attainments are here requisite for the pupil; first the practice essential to the making of a straight line, no ordinary test of skill, as experience will show; second, the combining of straight lines in parallels and in angles, acute, right or obtuse; third, the combining of these parallels and angles into figures of more or less sides until the most elaborate checkered or tesselated work is attained. The shading of an unvaried surface, as the clear sky or a level country, is in parallel lines; while the varied configuration of clouds, mountains, and broken country is executed chiefly in acute or obtuse angles. The best writers on Art-Instruction recommend the drawing of geometrical figures, in lines vertical and horizontal, triangles, squares and other regular polygons, in all conceivable attitudes and of all dimensions, without any mechanical aids, until the slightest deviation in each figure from its correct shape and proportions can be detected.

No amount of time spent in this attainment can be misemployed; as Lionardo da Vinci hints in his maxim, "Remember to acquire accuracy before attempting quickness." The most elaborate and life-like pictures in Mosaic at Pompeii and Rome are formed entirely of a combination of minute squares, by whose skilful union all the varied outline of the most finished painting is accurately copied.

The second lessons in drawing are in curves. First, all the regular curves in the conic sections, as circles, ellipses, parabolas and hyperbolas, should be copied till by a single sweep of the pencil any one of them can be accurately delineated; then every form of irregular or broken curves may be attempted. Finally, the combination of these different curves in every variety of form and figure which fancy may conceive should be executed with the pencil. The design of these preliminary lessons is to enable the pupil, first, to master all the combinations of lines possible; second, to comprehend the modifications to which the outline of an object is subjected by being viewed at every variety of angle, and at different distances from the observer. It is in the nice discrimination of changes wrought by minute variations of position that "character" for truth and beauty in drawing consists; as a careful inspection of engravings after works of the best Masters strikingly illustrates.

The next lessons are naturally the tracing of the figures of natural objects; in whose outline both straight and curved lines are united; such as, first, ordinary utensils, cups, mechanics' tools, etc.; then houses, fences, and other larger objects having regularly shaped figures. After these, as the best teachers suggest, the features of the human countenance and the parts of the human form are the most instructive study; first, the separate features and parts of the body, as the nose, the eye, the hand, the foot; then their combination in heads and entire human figures, at first nude, and afterwards clothed in varied costume and drapery. Sir Joshua Reynolds makes the copying of the human figure in its varied parts and postures, the first and great study essential to success in the highest works of art; and he regards the secret of the grace and beauty seen in the finished works of the ancients their "attentive and well compared study of the human form." In drawing the human features and figure, models in nature and plaster casts made from nature, as hands, feet, busts, and complete statues, may be used; these being as essential to the artist as to the student of Anatomy. Leslie[1] criticizes the

[1] Hand Book for Young Painters, Sect. 8.

requirement of the Royal Academy at London that pupils draw for some time from antiques before attempting to copy the human form in nature; and he cites Sir Joshua Reynolds' suggestion that students begin very early to draw from life.

After the human figure those of animals, quadrupeds, birds, fishes, and insects may be drawn; as the study of Comparative Anatomy properly follows that of Human Anatomy; flowers, fruits, single shrubs and trees, being made the last essays in single objects. The executing of groups, as clumps of shrubs and trees and ranges of buildings, herds of cattle and front ground views of single trees with foliage worked up, and finally all the varied and extended combinations and complications of the landscape, will be the crowning effort of the pencil.

The special difficulty of drawing vegetable forms, making it a final study, arises from the fact that the more complicated interior in man and in animals is hidden as in a case; while in the plant world the whole complicated internal structure is laid open to the eye, and must with its convolutions be copied by the pencil. It is in the delineation of these complicated organic structures, found in the landscape and not in human or animal forms, that Ruskin supposes the moderns have excelled the ancients. These two facts are, however, to be remembered. The very exposure to the eye of the fixed forms and open workmanship of the vegetable creation makes it but a work of secondary skill to copy a flower; while the study of the ever-changing and hidden swell and play of the human muscles is a work of the deepest science and most difficult execution in art. This again indicates that the ancients, who so highly excelled in the greater work, might have proved in the easier field still more in advance of the moderns had they turned their attention to landscape drawing.

Sect. 2. Proportion in the Outline of Plane Drawings.

Next to the executing of lines of a definite contour comes the study of just proportions in the different parts of figures. Here the work is two-fold; first, the preserving of the respective size of each part in a figure drawn in its natural dimensions; second, the securing of the proper enlargement or diminution in drawings made upon an increased or reduced scale. To assist in first essays at executing proportion, artificial aids may be for a time employed. The old masters recommended laying off the parts, as in plotting, by the dividers. Dr. Bell, the eminent writer on Anatomy in its relation

to Art, recommends the drawing of a net work of parallel lines over an engraving to be copied, or holding such a net work of threads between the eye and the object in nature to be copied. As the astronomical observer measures the transit of a star by the net work of spider's web in the field of his instrument, as the map drawer locates different sections of country by the parallels within which they lie, and as the embroiderer has a net work pattern to follow, so the proportions of any object are most rapidly and distinctly learned by observing the squares in such a net work in which the different parts naturally fall. It is interesting to observe this common law of human suggestion in the early specimens of art found in Egypt, as in the small ruined temple of Ombos near Syene; where it is seen that the Egyptian artists in order to secure the proportions of their figures first traced a net work of fine lines over the field of their work. Some teachers suggest, again, the use of a graduated measuring ruler; by placing which between the eye and the object whose proportions he would study, and by observing the space on the graduated edge covered by the entire form, and by each of its parts at distances greater or less from the eye, the pupil learns a principle of proportion which may aid him in the use of his eye. It is to be distinctly remembered, however, that this or any other artificial resort is to be laid aside when the pupil begins to draw; the eye must be trained to be its own measurer; and artificial aids should never be employed except in mechanical copying in the useful arts.

In studying proportion various subjects for the pencil may be selected; but the human figure is the handiwork of the Creator most strikingly illustrating the extent to which he has carried the law of intermeasurement in the forms of beauty given us as models. The details of this study belong to the subject of Sculpture rather than of Drawing; but the important remark of Lionardo da Vinci requires present notice. "In proportion the length of figures is to be regarded more than their breadth; for the *proportionate lengths* of the different parts of the human frame differ very slightly." This is owing to the fact that the breadth of the human figure is made, at different periods of life, to vary greatly in its proportions on account of the fluctuating accumulation or depletion of the overlying muscles and cellular tissues; while the stature is fixed to the unvarying standard of the bony frame-work.

As most drawings are upon a scale far smaller than the actual size of the object represented, a second study in proportion relates to the scale of diminution requisite in plane drawings made for different

purposes, and of objects of varied sizes. The fixed scale usually adopted in mechanical drawings will be noticed in another section; and the laws of graduated proportions in their higher applications will be considered in the Book on Sculpture. The study of natural objects will soon give a practical knowledge of the proportionate size of their parts; and the artist's hand will quickly possess an almost magical skill in preserving the scale of proportions he has adopted, whether the subject be a mountain compressed into a miniature sketch, or the leg of an insect magnified by the microscope. The altitude of the object in nature, as Lionardo intimates, should first be regarded; then its main proportions should be fixed in the mind's eye; and after these are executed the finish of details may commence. The characteristic features, as well as the beauties of every object consist in its main proportions and the distribution of its masses; not in its mere accessories and ornaments.

Sect. 3. Elementary Shading; the representing of the third dimension in Plane Drawing.

In all drawings the outline is first to be sketched. Shading is then added that the drawing may not seem to be a mere flat surface; but a form projecting from the plane on which it is executed. The mere outline gives no idea of the rotundity of a figure. In nature it is the manner in which the light strikes an object that produces upon us the impression that the form observed is a solid body. As rays of light proceed in parallel lines the parts of an object on which those rays fall, whether coming directly from the sun or indirectly by reflection from another object, will be lit up; while the parts on which the rays do not directly strike will be darker because they fall within the shade cast by solid projections. The imitation of this law of nature in drawing gives the pencilled outline the aspect of the real object. It is the province of Descriptive Geometry to give the mathematical laws of representing by a drawing on a sheet of paper having only two dimensions, length and breadth, the figure of an object which has three dimensions, length, breadth and thickness; for the portions of an object that will be shaded in nature, and the proportions of the drawing that must therefore be shaded in a picture is a matter to which the invariable law of mathematical calculation may be applied. It is, however, the habit of observation which gives the artist the practical science that enters into this art.

The methods of shading, or the combinations of lines by which shades are represented have differed in different eras, and in the prac-

tice of different masters. Some ancient engravers covered the shaded parts with a regular net work of straight lines crossing each other at angles of about eighty degrees; thus giving a diamond or lozenge-shaped reticulation to the appearance of their work. The method called "hatching," or hacking, from the French *hacher*, to hack or notch, was favorite with English artists of a century ago. This style of shading is accomplished by lines jutting in from the outline at acute angles like the chippings of a hatchet upon the edge of a board; a method appropriate for map shading, and that required in giving the slopes of mountains in topographical drawings. Ruskin refers to the fact, that Raphael and Lionardo da Vinci shaded with short straight lines; and he regards it the mark of a great master when rounded surfaces are shaded with straight lines. The old German masters varied much in their style of shading; employing lines straight or curved, dots, or rubbings of lines of India ink, red crayon, or black lead lines, as seemed best to suit their end; varying their method in works of different character; while, too, the same artist had different styles for the same work at different periods of life. The great aim sought in their methods seems to have been to secure a resemblance to Nature by as few lines as possible; the simplest method being esteemed the best.

Sect. 4. Chiaroscuro; the gradation of light and shade.

In shading it is important to notice that in nature no shadow is completely dark; but the amount of light thrown upon different objects and parts of objects is at any moment so varied that only a practiced hand can copy the gradations of shade, which every eye practically observes in nature, though their cause is not conceived. Rays of light coming in direct lines from the sun strike objects presenting faces either perpendicular or oblique to the illuminating beams; and these rays are reflected with more or less completeness, according to the character of the surface, and in directions corresponding to the inclination on which they fall. Thus objects in nature, illuminated by direct and reflected rays of the sun, have shades proportioned to the amount of light thus received. This effect is illustrated to the eye when two lamps in the same room cast each its own separate shadow of any form upon the white wall; a half shade being cast where the light of one only of the two lamps is cut off by the object causing the shadow. In the sunlight the number of counter lights from reflection is without number, and the gradations are correspondingly numerous.

The Italian word *chiaroscuro*, a compound of the words "clear" and "obscure," is used to designate this variation of shade in nature, as also its representation by the pencil. The successful execution of chiaroscuro has always characterized the climactic era of advancement in the nations that have attained to the true idea of art. Lionardo da Vinci, who, in the revival of art in Italy, first taught the principles of chiaroscuro and of its execution, has the following among his numerous suggestions: "If you wish to make good and useful studies, use great deliberation in your drawings. Observe well among the lights, which, and how many hold the first rank in point of brightness; and so among the shadows which are darker than others. Observe, also, in what manner they blend together; compare the quantity and quality of one with the other; and observe to what part they are directed. Be careful also of your outlines, or divisions of the members. Remark well what quantity of parts are to be on one side, and what on the other; and then where they are more or less apparent, broad or slender. Lastly, take care that the shadows and lights be united, or lost in each other; without any hard strokes or lines. As smoke loses itself in the air, so are your lights and shadows to pass from one to the other without any apparent separation." Ruskin enlarges on the care necessary for successful execution of the light touches which indicate the shading of water and cloud; the former requiring delicate curves among the parallels to indicate shadows and ripples; while to attain skill in the latter, he recommends his pupil to draw a bunch of cotton placed in the rays of the sun.

Sect. 5. Binocular vision; and its influence in giving apparent reality to the projection represented by shadows.

It was observed even as early as the days of Lionardo, that the two views of a *near* object afforded by binocular vision, or the sight of our two eyes looking upon the same object at the same instant, but at different angles, greatly aids the impression of rotundity; a fact, which has in later days been specially illustrated in the Stereoscope. The projection, or throwing forward of the portion of the figure nearest the eye, becomes the more apparent when the object viewed is so near the two eyes that both are turned at an angle inward upon the object, one eye looking upon it on one side, and the other eye on the other side; the two eyes taking in the entire circuit of its rotundity. If, for instance, the cover of a book, red upon one side, and white on the other, be held with its back or thin edge

directly before and between the eyes, by closing first one and then the other eye, each of the two sides will be alternately seen alone; while with both eyes open both sides will be seen together. If, again, a book be held at some distance from the eyes, and before a white wall, by closing the left eye, the portion of the wall on which the image of the book falls will be seen to be far to the left of the centre of vision, in the direction of a line drawn from the right or open eye to the wall; by closing the right eye, the image will fall to the right of that centre in the direction of a line drawn from the left or open eye to the wall; and if both eyes be open, it will be seen to fall directly central at a point exactly between the two extremes. A striking illustration of these two effects combined is obtained by holding a tube, or a roll of paper, between the thumb and first finger of the right hand, and then looking through the tube with the left eye, while the right eye views the tube and hand on the outside. The left eye locates the tube too far to the right, and the right eye locates the hand too far to the left; and thus the tube appears to pass directly through the hand.

Some modern writers on art urge that the effect of the stereoscope, which instrument is constructed on the principle here stated, should be sought in a pencil drawing. As in binocular vision, or the sight of both eyes, both sides of an object are seen, and thus its rotundity becomes real, so in the stereoscope two pictures of the same object, taken the one at the angle presented to one eye, and the other at that presented to the other eye, are seen as one: because the two pictures are placed before the two eyes just at the point where in natural vision the separate views of the object falling on the two eyes were combined into one view. It is suggested that this effect of the stereoscope may be secured in the shading of a drawing; the impression of roundness in the object being attained by the careful study and copying of the effect upon the organs of vision produced in the simplest act of sight. The bearings of this subject are more apparent in Perspective than in Plane drawing.

Sect. 6. The Applications of Plane Drawing.

The true artist will practice his art for its own sake; yet the idea of utility ordinarily controls men. The most important applications of plane drawing are found in the mechanical arts and in surveying. The manufacturer of a chair must first draw his pattern for a new fashion; and the machinist must have the whole complicated contrivance which he is to execute in a solid form first delineated in a

plane drawing. The builder, as distinguished from the architect, must have for the simplest structure a ground-plot plan of each story represented in outline; in more tasteful structures, as churches, he requires the front elevation; and in buildings of more complicated interior and of more elaborate exterior, he must have various sectional views presenting the perpendicular face of the interior supposed to be cut from top to bottom, and also a separate elevation of each entire face or limited portion of the exterior where the general style is varied. An extended application of plane drawing is required in the business of the Patent agency; where a minute drawing of every article to be patented is demanded.

The business of the surveyor, including that of the topographical and hydrographical engineer, calls into requisition the same art. The humblest farmer needs a plot of his fields; and even the country maiden seeks a plan for her flower-beds. This, to be done intelligently, requires the theory derived from geometrical study and practice with the drawing-pencil. The mapping of a village, or township, is a higher and constantly required work; while the labors of the corps of the topographical and hydrographical bureaus connected with the Land Office and Coast Survey, is the broadest application of the art. In the plotting of a field a mere outline is required; the angles being laid off and the lines drawn with the appropriate instrument. In the mapping of a town, the outline including the great highways, etc., is to be first laid down, as in the plot of a field; and then the varied delineation of roads, and water courses, forests and open fields, houses and other buildings is to be artificially represented with the pencil. In ordinary maps of this nature, the observer is regarded as looking from above, like an aeronaut in a balloon; roads are represented by two parallel lines; railroads by two parallels with cross lines or bars, and unfinished railroads by the absence of one of the side lines; water courses by two lines varying slightly from parallel according to the width of the stream with faint parallels between; plain land by dots sprinkled over the surface; sheets of water by faint parallels; forests by involved curves representing tree tops; rocky lands by broken dark lines forming irregular figures; dwelling-houses by small parallelograms; public buildings by larger parallelograms with dots for front columns, or a short spire. In maps of a more extended region, the parallels of latitude and the lines of longitude are first drawn; then the general outline of sea-coast, of mountains, rivers and state limits; and then the minuter delineations of towns, high-roads, lakes, etc.

The coast is marked by short horizontal parallels projecting from it; and mountains by a dark-ribbed delineation following the track which water courses flowing from them would take. In the representation of sections of railroad, and of the elevation of a country above the water level, it is a horizontal view of a perpendicular face which is given; similar to a section of a house. Upon a horizontal line perpendiculars of the proportionate height and distance from each other are raised, and the outline of the surface is drawn above in broken curves. Ledges of rock in such outlines are represented by oblique parallels, water channels by fine horizontal parallels, sand by fine dots, and gravel by coarse dots.

The proportion as to size between the object and the drawing is in mechanical drawings from one-fourth to one-eighth of the natural object; in architectural drawing one-fourth of an inch to a foot; and in maps, and plots, a given number of inches to a rod, a chain or a mile. In the U. S. Coast Survey, the proportions in mapping are expressed in fixed decimals; varying according to the size of the Chart from the proportion of 1 to 5,000, up to that of 1 to 400,000. In the engineer service, the proportion for plans of buildings is 1 to 120; of railroad sections 1 to 600; of maps of an extended country 1 to 2,640, or two feet to a mile; the scale enlarging with the extent of surface. The rule for shading the slopes of hills and mountains is also a fixed, though improving one; being now for a descent of 75°, nine of black to one of white, and thence decreasing to a slope of but 2° 30 in., where the proportion is one of black to ten of white.

It should be specially noted that it is only the first acquiring of the power of drawing in the mechanic arts that deserves the name of Art. Art is a living creation, rather than a mechanical making of forms. The drawer of architectural designs and of hydrographic charts is an artist only when his business is to conceive new forms and to execute designs in new methods.

CHAPTER II.

PERSPECTIVE DRAWING; THE REPRESENTING OF FORMS LOCATED IN PLANES MORE OR LESS REMOTE.

In Plane Drawing, the parts of the single object delineated are represented as all of the same dimensions; as they appear in nature

when the eye is equally distant from every part. In Perspective Drawing, the gradually diminished dimensions of the parts of an object represented as more distant from the eye give the aspect of nature to a retreating outline; while the same graduated diminution in size of objects remote from each other allows the perfect picture of an extended landscape to be put upon a small tablet.

Sect. 1. The Nature of Perspective, and of foreshortening.

The term "perspective" implies, as its Latin derivation indicates, a looking through; and a drawing in perspective is one in which there is added to a plane drawing in the foreground a lengthened view of objects in the background. The law of perspective is, that objects diminish in size as their distance from the eye is increased. This principle is dependent on the law of optics, that the angle of vision is filled by a small object near the eye, and takes in objects at a distance increasing in size in proportion to that distance; and it is also dependent on the geometrical law, that in triangles, the angle opposite to a side of fixed length diminishes in proportion as the length of the sides containing it are increased. Drawing in perspective is the representation on a plane surface of objects in nature at less or more remote distances behind that plane surface.

A simple method of illustrating to the eye perspective in nature is to look at a landscape through a net work of lines crossing each other at equal distances; when the largest object in the distance will be seen to fill a square no larger than that occupied by a small object near the eye. A simple method of assuring the eye of the geometrical law of diminution is to look at any object, as a man, across the edge of a graduated ruler; when the form which covers ten inches near the eye will be seen to cover but five inches at double that distance. An easy method of accustoming the hand to trace correctly the proportions of objects in perspective is to hold a pane of glass between the eye and the landscape, and to trace with the pencil upon the glass the outline of a row of trees, or other similar objects. Ruskin, in his popular treatise on Perspective, recommends this method. As this diminution of the proportions of a retreating object exists in two dimensions, length and breadth, or in both the vertical and horizontal axis of the field of vision, the proportions of an object diminish as the square of the distance increases. The law of heat, light, electricity, and magnetism, is the same, since the rays of heat, light, electric and magnetic attraction issuing from a centre are diffused in space enlarging in two dimensions; the force that was

expended on one square inch of surface at the distance of one inch being expended on four square inches at a distance of two inches.

Plane and Perspective Drawing are distinct in the end they propose, as well as in their method. Plane drawing is designed to represent only the face of an object, as a model of a machine or the front of a house, to be a guide to a workman. It is necessary therefore that every line in the drawing should preserve its proportionate length. The eye in executing the drawing is supposed to move and to place itself at the same distance from each part of the figure; as the workman moves his position in executing each part of his work. In a plane drawing therefore, all lines are parallel in the model of the draftsman which are parallel in the object itself, or in the work of the mechanic. In a perspective drawing the proportions of objects and parts of objects are to be represented as they appear to the eye from one fixed point of view. Lines therefore which in nature are parallel, as the tops and bottoms of a row of trees, or the eaves and sills of a house, the side-walks of a street, are made to converge in the drawing towards a point where they would meet each other in the picture as they apparently meet on the horizon in nature.

The execution of perspective in the different parts of a figure placed in the foreground, called "foreshortening," is the most difficult work in the art of drawing; since it is not the diminution of size which is to be represented by the pencil, but it is the careful imitation, by the character of the lines employed in the drawing, of the appearance presented to the eye when an object is placed obliquely to the line of vision. This effect is illustrated by taking a pencil, a walking stick, or any long and slender object, and holding it first upright, perpendicular before the eye; then turning it slowly at every angle through a quarter of a circle, or an arc of 90°. In this process first the entire length of the pencil is in the field of vision; then a gradual diminishing of the length is observed; until finally the small circle of the end of the pencil, alone seen, covers and hides from view its entire length. The representation by mere lines in a drawing of these varied changes apparent in nature to the eye, requires the highest skill in the art of drawing. In the human figure foreshortening is required in the limbs when a portion of the leg of a person seated, or of the arm resting on a table is to be represented obliquely, at an angle with the other part of the same limb. It is also to be studied in the drawing of an animal lying or moving with his limbs and body advanced towards the beholder; also in

a landscape drawing where trees or other objects are leaning in different directions.

Sect. 2. The Practical Execution of Drawing in Perspective; and Artificial Methods of illustrating its Principle.

The practical execution of perspective in drawing is usually acquired by pupils before they comprehend its theoretical principles as taught in Descriptive Geometry. This knowledge can only be gained by a long training of the eye to measure proportional diminution of forms occasioned by distance; added to the training of the hand, as in plane drawing, to the delineation of those forms in lines. Teachers of art suggest that the first lessons of the student in perspective be the copying of the best engravings; or rather the study of the *method* of the engraver in the execution of perspective. Proceeding then to nature the first attempts should be made in delineating the faces of objects with regular straight sides, as a cubic block, a house with its windows, or a door standing open at different angles. The drawing of the top of a cup or drinking glass, placed at different angles to the eye, gives practice in tracing curves in perspective. These lessons in single objects may be followed by drawing regular rows of trees and houses and chairs; then rows of animals and men. As a last study portions of landscape more and more extended may be attempted; until finally all that the eye can take in without turning the head, or the space included in an angle of from 40° to 60°, may be brought into the same picture.

Artificial aids have been recommended by the best artists in the first effort to fix the measure of diminution in perspective. Thus Pietro di Borgo, the earliest modern writer on the science, suggested the tracing of perspective on glass covered with a thin coating of wax or varnish, and held between the eye and the landscape which is to be brought into the perspective view. Albert Durer constructed a machine which could be adjusted so as directly to measure the proportions of objects in perspective. Other teachers have suggested the holding of a thin paper on which the drawing is to be taken again and again before the eyes, and looking at the line of objects across the edge till their proportionate height and breadth compared with that of the drawing paper is fixed. In times quite modern Ruskin has recommended that in studying the proportions of the landscape a pane of window glass with a wooden frame be employed; on which the eye and pencil, without leaving any impression of course, may trace again and again each feature in its appa-

rent dimensions. Yet others have recommended the use of a jointed ruler opening with its joint farthest from the eye, so that its sides sloping to an angle, shall take in and range with the perspective lines of the objects to be copied; when by placing the ruler on the drawing paper and tracing lines along the inside of the arms till they meet at the joint of the ruler rows of houses, trees or other objects may be drawn of the altitude conformable to the law of perspective. The eye, however, should soon come to be its own measurer in fixing and following the perspective lines; as in a plane drawing, the eye must learn to measure the proportions of objects drawn after a given scale.

In delineating objects in the extreme background, the skill of the artist is tested in giving the indistinct outline as well as the diminished size of objects but dimly seen. This principle, quite distinct from though associated with Aerial Perspective, Ruskin practically discusses, suggesting many valuable hints as to the delineation of the outline of trees, clouds, etc., in the distance. It is so natural in drawing to present what *would be* seen if we were near the object, rather than what *is* seen at a distance, that the rule requiring a complete study of nature in this respect cannot be too strongly urged. In sketching distant groups of trees, for example, it is not the working up of details, not the tracing of the undistinguished leaf, that is to enable the beholder to discriminate between the elm, the oak, the pine; but it is the less studied yet equally manifest difference in general contour, both of single trees and of a group, which is alone visible in the distance, and which the genuine artist will seek to attain.

Sect. 3. The Lines and Points to be first fixed in Perspective Drawing.

In perspective drawing the *horizontal line*, or more properly "the line of the horizon," is to be fixed at the outset; or that line toward which all the lines in the perspective tend. In looking into the distance on the earth's surface, whether over the land or sea, there is a line at the remotest point visible where the sky and earth seem to meet. This appearance does not result as might be hastily supposed from the rotundity of the earth; for in looking through a straight passage, like the Thames tunnel, the floor seems gradually to rise and the ceiling to be depressed until they meet in the remote distance. Thus, too, the whole heavens, for a reason to be considered under "Curvilinear Perspective," seem to be a concave: the line of

the clouds and stars seeming to be bent into a sloping plain. This line in nature where objects above and below the eye seem to meet was called by the Greeks the horizon, from the Greek verb *orizo* to limit. Towards this line the outlines of all intervening objects in the landscape, as the tops and bottoms of trees, seem to slope upward from below and downward from above. The science of perspective teaches us to copy in a drawing made with the pencil this law of vision. In making a sketch from nature this line towards which all lines lying in horizontal planes above and below must converge, is first to be fixed in its position on the drawing paper.

To aid in fixing this first line Lionardo da Vinci gave this rule; "The point of sight must be taken on a level with the eyes of a common man, and be placed upon the horizon; which is the line formed by a flat country terminating with the sky." Common men occupying their natural position, standing on the earth, have their eyes elevated about five feet above the general level; while most objects, as houses, trees, hills, and mountains, rise far above that level, and of course above the artist's eye. In an ordinary perspective view, therefore, the horizontal line is naturally placed near the bottom of the picture; because of this natural position of man as the beholder. The bird, however, unlike man, soars above the earth; and there is more below than above his horizon. In taking a view from a mountain top, from a lofty rock, or from an elevated steeple, the artist occupies the position of the bird; and hence is said to take a "birds-eye view." In general, the elevation, supposed or real, of the artist's stand-point while taking the view, determines the height on the picture of the horizontal line; both the nature of the scene copied, and of the general aspect of the country familiar to the artist, guiding him in this particular. In views of the interior of an elevated edifice, as a cathedral, the height of the horizontal line is about one-tenth of the distance from the bottom to the top of the picture; in architectural exterior views of houses, streets, etc., one-sixth; in extended landscapes one-third or fourth; in domestic scenes one-half or one-third; and in historical paintings, where a limited field is brought in, about three-fifths of the same distance.

While, however, in many classes of scenes for the pencil, artists of every clime and age would agree in the height at which they would fix their horizontal line, in landscape sketches artists of different lands and schools have greatly differed. The painters of the Flemish school, accustomed to the perfectly level lowlands of Holland, with no raised stand point, fixed the line of their horizon very

low; while Swiss, Scotch, and Italian artists, from the opposite character of the surface of their native countries, followed as naturally an opposite rule. In the period previous to Raphael, the horizontal line was often fixed at the extreme height of four-fifths, and even of nine-tenths of the altitude of the picture, thus giving to their works the aspect of birds-eye views, and precluding the execution of landscape proper. The design of this method was to furnish a large field for the front view and action; thus leaving little for the background and the repose of the picture. The extremes of this class of painting are those in which several separate but successive scenes are introduced into the same painting which really are so many separate pictures; as in those presenting the seven different incidents of Jesus' progress from the hall of judgment to the place of crucifixion. In general, the rule may be stated; in a perspective drawing, the horizontal line, or the line where sky and earth seem to meet, is placed higher or lower on the picture according to the height of the artist's elevation, or to the extent of the field of action embraced in his picture.

After fixing the horizontal line, the point on that line called "*the vanishing point*," is to be fixed. Since objects in perspective diminish in two dimensions, as lines above and below the eye seem in nature to converge to a horizontal line in the distance, so lines on either side of the eye seem to converge from either hand to one point on that line. In the picture made with the pencil, which has two dimensions, height and breadth, the lines which copy objects of vision must follow the law of vision and converge from either side of the drawing, as they do from its top and bottom. The point towards which the pencil lines thus converge is called "the *vanishing point*," because at that point in the plane of vision all objects seem to vanish; being lost to view in the distance. It is on the horizontal line, and at the point in that line which is immediately before the eye of the artist when in position to take in the whole of his picture without turning his head. In any drawing there may be subsidiary vanishing points to which the lines of certain portions of the picture converge; points located within the picture, or without it, on either side; but all lying in the horizontal line prolonged. The principal vanishing point is the one to which all lines parallel to the line of vision tend; as the walls of a hall, the sides of a street or valley down which the artist is looking; who will generally select for his view a point from which the lines of objects tending to one centre may be brought into view. The principal vanishing point, therefore,

will usually be the centre of the picture; or, as the artist working with his right hand stands a little nearer the left than to the right side of his picture, it will be before his eye at his *main* standing point. In the "Last Supper" of Lionardo da Vinci, for example, the vanishing point is at the eye of Christ in the very centre of the group. For subsidiary parts of the picture, as for the *ends* of buildings whose *fronts* tend to the principal vanishing point, it is always necessary that there be one or more vanishing points additional to the principal one; since the eye turns to one point in tracing one side of a building, and to another in tracing another side at right angles with the first. Again, in an extended picture a change in the position of the beholder is required; while even two adjacent objects, on account of their different adjustment, may require a different point on the horizon to which their lines of perspective shall be made to tend. In a perspective view of a hall the centre would naturally be the principal vanishing point, and all chairs, benches, etc., standing in regular adjustment, or in symmetry with the parts of the hall, would have the same common vanishing point for their front, and the same subsidiary vanishing points for their side lines; but if one article of furniture be standing obliquely to another, it must have its own separate vanishing points. The same is true to a greater extent in a large field with many moving figures; as lines of soldiers, etc.

The "distance-point," or "eye-point," is of equal importance with the "vanishing point," since the one is in a measure affected by the other. As the vanishing point is the point within, or rather *behind* the picture to which the lines of light falling upon the scene in nature all converge, so the distance-point is the point *without* the picture, in *front* of it, to which the lines of light coming from each part of the picture to the eye of the beholder also converge. The artist constructs his work with the design that it be viewed from his own fixed point of view in front of the picture, and at a certain distance; which can be easily ascertained by the beholder. The main vanishing point must then also be precisely opposite this point of view. This point is therefore called "the eye point," in its relation to the principal vanishing point, in contradistinction from numerous accidental vanishing points, which in a varied view of buildings, streets, etc., are scattered along the horizon, and are caused by the diversity of angles at which streets and buildings lead to the horizon. Its distance, therefore, in front of the picture, must be just that which is necessary in order that the entire surface of the picture be covered by the eye's field of view; or that point where

every part of the picture without the turning of the eye will fall within the angle of vision. The two designations, *eye* and *distance*, applied to this point indicate two distinct facts; the first that the point is in the *line* of the eye as it views the picture; the second that it is at a *fixed position* in that line. The importance of correct adjustment of this point is indicated by Ruskin, who says, to young artists, "*First* fix the *station-point*, or distance at which you will stand from your picture." As to the distance to be chosen, Lionardo da Vinci gave the following directions: "Remember that objects diminish in size as distance increases. In calculating this diminution, stand at twice the length of your picture from it. Remember that if you vary your distance, you vary the rate of diminution. It must be *one point*, not only in distance, but also in elevation and laterally. It should be on a level with the eye of a man of ordinary stature." Raphael's chosen distance for the eye of the beholder was one and one half the breadth of his picture. Some subjects, however, require three lengths of the picture as the distance of the eye-point; the larger dimension, whether height or breadth, being the one to regard. In all cases it should be the point where the field of distinct vision just takes in at a single glance, and without the *turning of the eye* the entire picture; while at the same time the eye can be directed to each separate part of the picture without the *turning of the head.* The practical effect of an error in this respect is seen when in taking a daguerreotype likeness, one part of the person, as a hand, is advanced in front of the other parts; and being daguerreotyped at a nearer distance point, is enlarged in dimensions.

The power of the artist is most seen in the selection of "eye-points" when very large paintings are to be examined from different points of view. The highest perfection and greatest triumphs of the art of perspective have hence been achieved in the extended views made up of successive scenes brought into single fresco paintings on the walls and ceilings of the Churches and palaces of Europe. By the power of this art whole interiors are transformed into an ever-changing variety and succession of magnificent halls and corridors with windows and porticoes opening on boundless landscapes; while low ceilings and artificial cupolas seem as by the power of enchantment to open up to the very heavens, where fairy spirits float in ether far beyond the clouds. But all such paintings have a certain point from which they must be viewed; otherwise the illusion fails and the enchantment is lost.

Sect. 4. Principles of Descriptive Geometry and Projection entering into Perspective Drawing.

Though native genius for art may enable the pupil to become practically efficient in the execution of perspective drawing, yet in art, as in all other human pursuits, theoretical knowledge of the science that enters into the art is of *most* importance to the artist himself, while it is *all* important to the educated lover of art who has little or no time for its practice. An engineer may be skilful without a training in the mathematical principles that enter into his profession; but he will be at a loss when any *new* application of his mere experience is called for. The *science* of engineering is *most* important to the practical man and *all* important to the general student. So the unscientific artist can only be a copyist of old ideas and of former applications. To originate new conceptions and execute his own individually conceived forms and combinations of form in perspective, the artist must be master of the geometrical principles that underlie all practical experience. The College student should have made thorough mastery of the science of Descriptive Geometry; then it will be a delight unequalled perhaps by any other in the course of his College studies to find how perfect and admirable is the dependence of all the laws of beauty, grandeur, and sublimity on pure and exact science. A brief reference to the main applications of geometrical principles to perspective is all that is possible in a condensed and fragmentary treatise on Art Criticism.

The leading object of Descriptive Geometry is to present the laws for representing with mathematical accuracy the visual appearance of objects having three dimensions on a plane having but two dimensions. This representation is called in scientific language *the projection* of an object. The plane on which this representation is drawn is called *the plane of projection*, or the *perspective plane*. Every portion of the *thickness* of an object viewed in front of the eye lies in one of a series of *vertical* planes, or of planes perpendicular to the line of vision; and every portion of the *height* of the same object also lies in a series of horizontal planes, or of planes parallel to the line of vision. In projection, which presents only the visual face of an object, all the parts of the object viewed are referred to two single planes called "the vertical plane" and "the horizontal plane;" and the main requisite for an artist, so far as Geometry is concerned, is

to be able to transfer the representations on both these two planes to one and the same plane of projection or of perspective.

For the purposes of geometrical delineation and calculation these two planes, the vertical and horizontal, are supposed to be perpendicular the one to the other. In nature the objects to be represented, whether lying at length as a fallen column on the horizontal plane or rising like an upright column above the horizon in the vertical plane, are few of them really in a plane horizontal or vertical, *i. e.* parallel to or perpendicular to the line of vision; but they lean in different directions, and in some of their parts present themselves at every possible angle of obliquity to the line of vision: yet in projection the dimensions of all objects are referred to these two planes. The law of the diminution of objects seen thus obliquely is important; as also the execution of this law is difficult in what is called "foreshortening," or that shortening of the length of an object which arises from its being before the eye. The diminution of objects seen in the distance is in both dimensions height and breadth of the same proportion; while the diminution of objects shortened by their obliquity to the line of vision when before the eye, is greater in the dimension that is in a line oblique to the line of vision than in the dimension, whether height or breadth which is not oblique to that line.

Descriptive Geometry treats *first* of the methods of projecting on the plane of the drawing, single objects with straight or curved lines as their contour; *second*, of drawing straight lines and plane surfaces as tangents to curved lines and curved surfaces, such as circles and spheres, ellipses and ellipsoids; and *third*, the method of representing the intersections of various bodies bounded by curved lines as cylinders, cones, etc., which cut each other.

The first subject may be illustrated by a simple method. A book set upon its edge on a table may represent the vertical, while the table represents the horizontal plane. If a long, slender object, as a pencil, be held first parallel to, then obliquely to these two planes its trace will be straight or bent according as it falls in one or both planes. Holding the cover of a book horizontally, so that its *edge* only is presented to the eye, its trace in the vertical plane will be observed to be only a straight narrow line on that plane, whereas if looked upon from above it will be projected in its full length and breadth on the horizontal plane; while if viewed from any point between the horizontal and vertical position the entire length with more or less diminished breadth will fall on one or both planes.

A coin thus held, is but a line upon the vertical plane when viewed horizontally; it is a circle on the horizontal plane when viewed from above; and it is an ellipse of greater or less eccentricity when viewed from any point between the vertical and horizontal positions. When thus the eye has been trained to this observation with the two planes, the same experiments may be tried with the single plane on which the drawing is to be executed.

The *second* portion of Descriptive Geometry may also be familiarly illustrated. A bright sheet of tin seems to glisten at every point in the sun; since its rays striking every point of the surface at the same angle are also reflected at the same angle. Upon a cylindrical tube, however, there will be seen a single narrow line of light from top to bottom; this line alone standing in such a position to both the sun's light and the observer's eye that the angles made by each with the tube are equal. Upon a globe the field of reflection will be but a single round bright spot at the corresponding angle. If the curved body from which the reflection comes be an ellipsoid the field of bright reflection will take a corresponding shape. Thus the bright spot called the white of the eye, indicates by its location the direction in which the eye is turned. The point on the sphere, and the line on the cylinder where the reflection is seen, is the portion of the curved surface which would be touched by a plane made tangent to that surface. Though the applications of this principle are wider in sculpture, in which Art every part of the curved form, as of a statue, is conceived as lying under tangent planes from whose surface the distance of each part is carefully calculated, yet in drawing, as Lionardo da Vinci indicates by the large space he gave to Reflexes in his teaching, important applications of it are to be made.

The third subject treated in Descriptive Geometry may be observed in the juncture of the stones in an arch, or in the joinings of mouldings in the ornamental carved work of doors; whose difficult attainment has made the name "joiner" the designation of a profession in the mechanic arts. The power to draw the *appearance* of such junctures, and that at every conceivable angle, is practically acquired by much labor; while the method in theory can only be learned by careful study of Descriptive Geometry.

As the Plotting of Maps of a limited extent of country, in which the sphericity of the earth's form is not regarded, belongs to the subject of Plane Drawing, so to the department of Perspective Drawing, or of Descriptive Geometry in its relation to Perspective, belongs the consideration of the projection upon the plane of a map of the

hemispheres which make up the globe. In representing this projection four methods have been pursued; which differ from each other chiefly in the distance at which the eye is supposed to be placed in viewing the hemisphere thus projected.

In ordinary maps of the world the division of the globe is for convenience made into the Eastern and Western Hemispheres; the former including the continents of Asia, Africa and Europe, and the latter those of North and South America, with a portion of the two intervening oceans skirting each border. Each hemisphere of course takes in precisely one-half of the entire globe; the poles being the Northern and Southern limits, and the circles of longitude 20° West and 160° East of Greenwich, being the Eastern and Western limits. In projecting these hemispheres upon the plane of the map the eye is supposed to be over the central point; which in the Eastern hemisphere would be at the intersection of the equator and of the circle of longitude 70° East of Greenwich, and in the Western hemisphere at the intersection of the equator with the circle of 110° West longitude.

In the first method of projection the eye is supposed to be at an *infinite* distance; or, what would be equivalent, it may be regarded as moved so as to be perpendicularly over each point of the circular plane which forms the base of the hemisphere. In this case, the hemisphere projected is the one nearest to the eye, or the one above the plane of projection; and the portions of the hemisphere nearest to the periphery must of course be represented only in profile and greatly compressed. A map of the sun or moon made by one on the earth's surface must of course be of this description. This mode of projection was known to the ancient Greeks, and was called by them *analemma*. It is now styled "Orthographic;" the lines of vision all being parallel to each other, and at right angles to the plane of projection. It was by this method the Grecian astronomers represented their celestial sphere in a plane.

In the second method of projection the eye is supposed to be placed at the centre of the sphere. This method was also known to the ancient Greeks, and was called by them "Gnomonic," from the *Gnomon*, or triangular upright of the dial which radiates from the centre. In this mode of projection, as the position of the eye is the extreme opposite of the former, so the objection to it is an opposite one; the exterior portions of the map are distorted by being expanded beyond their proper proportions, instead of as in orthographic projection being contracted too much.

Again, as a third method, the eye may be on the surface of the sphere at the intersection point of the equator and central circle of longitude. In this case the hemisphere projected is the one opposite the eye; and the plane of projection is the great circle forming the base of that hemisphere. This mode of projection was also known to the ancients; the geometrician, Hipparchus, seeming to have been its inventor; and it was called by them *planisphere*, because by it a sphere is represented upon a plane. Ptolemy, the geographer, wrote a treatise on it and employed it in his maps. This was translated into the Arabic when that people became eminent in Astronomy; and it became to them an introduction to Trigonometrical calculations. In this mode of projection every line from the eye to the plane of perspective, except the one over the centre, strikes the plane of projection at an angle less than a right angle; and hence every part of the hemisphere represented, especially at the periphery, is more or less distorted. This method, however, is far preferable to either of the others mentioned.

A fourth method of projection has at a later era been employed, designed to correct the imperfection even of the third method. The effort was to fix a point outside the upper portion of the sphere from which the lower hemisphere could be so viewed as to make the distances intercepted by the lines of vision on the area of the projecting plane, which is the great circle dividing the hemispheres, as nearly as possible proportionate to the arcs of the projected hemisphere intercepted by the same lines of vision. No single point could of course be fixed which would meet this condition; though a movable point might be made to answer. The best point is that at which the line of vision which passes through the plane of projection half way from the centre to its circumference shall also cut the lower hemisphere one half way from its horizon to its nadir.

More recently maps of the world have been constructed on a system of projection called "Mercator's;" in which the superficial surface of the sphere is so expanded from the equator out to either pole as to be stretched over a cylinder whose diameter is that of the globe. By this method the small circles of latitude constantly becoming of less diameter to the poles, are made to expand to the size of the equator; the relative disproportion between the distances in latitude and longitude near the poles being corrected by an exaggeration of the former in the same ratio that the latter is expanded. This method of projection, however, has direct connection rather with the subject of proportion than with that of perspective.

Sect 5. The Principles of Optics and of Trigonometry as they relate to Perspective Drawing.

Geometry treats of the measure of extension; including the consideration of the relation of the sides to the angles of triangles, into which all plane figures, or those having two dimensions, may be divided, and by means of which their areas are measured, which is Trigonometry proper; while it embraces, also, the calculation of the masses of solid bodies, or figures having three dimensions. Optics treats of the laws of light and of vision; excluding the chemical properties and action of light as a physical agent; but including the principles of the mechanical movement of light and of the laws of reflection and refraction as they relate to human vision. In its usual acceptation, the term Optics unites the consideration of the mechanical properties of light, with the trigonometrical principles applicable to their action.

The main principles of Optics which the artist is called to observe relate to the laws of the diminution of objects in size according to distance, their different shadings as dependent on the laws of the reflection of light, and the distorted appearance given to objects when seen through a medium that refracts light. The first of these is inseparable from the geometrical law with which it is associated; the second has a bearing on the laws of Descriptive Geometry considered in the last section; and the third has a relation to color which will be treated of in the Book on Painting. They seem, however, to demand separate and connected notice in their relation to drawing in perspective.

The law of the diminution of objects both by their distance and their inclination to the line of vision, already alluded to, may be illustrated in a simple manner. The angle of distinct vision does not cover more than about 30° in a vertical direction; and about 45° in a horizontal direction. Hence, if from the centre of a circle the eye is directed to the circumference of the same circle, it would clearly see about 30°, or one-twelfth part of that circumference, if held perpendicularly before the eye; and about 45°, or one-eighth of the circumference, if held horizontally. The chord of an arc of 30° would be about one-half the radius; and the chord of 45° about two-thirds of the radius. Thus the angle of distinct vision is filled vertically by an object placed at a distance of about twice its own height from the eye; the object having a breadth one-half greater than its height. At twice this distance, or at four times its own length, the object

would cover but half the angle of vision in either dimension, filling but one-fourth, therefore, of its field. This law is general in its application; a picture two feet from top to bottom, and three feet in breadth, filling the eye at a distance of five or six feet; while a mountain three miles high and four and a-half miles broad at the base, would cover the same angle and hence fill the eye at eight or ten miles distance. If the frame of the picture without the canvas be held before the eye, the mountain and all the intervening country in the same range would be seen within the borders of the frame; each object being diminished in size, both in height and breadth just in proportion to its distance. The law of optical appearance thus indicates that the whole of that range of country thus seen through the picture frame could be drawn upon the paper or canvass of the dimensions of the aperture through which it was viewed.

By the law of reflection a ray of light falling on any reflecting surface is bent back or reflected at an angle equal to that at which it falls upon that surface. As when two boys, throwing a ball to be caught on the rise as it rebounds, learn to make it strike the earth midway between them, so the child soon learns to go as far to one side of the mirror as his companion is from the other side if he would see his face reflected; and the intelligent traveler is not surprised to be told that the lofty form of Mount Blanc, rising four miles high and about forty miles south of Geneva, can be seen reflected on the bosom of Lake Leman, near that city, by one strolling along its northern bank on a clear, still morning. The student of perspective, learns by observation, that every surface in nature, even the rosy evening clouds, are reflecting surfaces; that every body with several surfaces throws back light upon objects around it at every angle which its sides present to the light; that this angle is always equal to that at which the light strikes the reflecting surface; that the intensity of the light reflected is always proportional to the smoothness or polish of the reflecting surface, and to the clearness of the atmosphere through which it passes; so that even the rough face of the moon, turned from the sun, throws back the light first reflected to it from the earth with sufficient distinctness, even after this double reflection to make the full round orb at new moon to be plainly seen by the eye in a clear sky.

The law of refraction, though specially demanding study when the refracting substance is a prism separating the sun's rays and producing color, is also to be considered in its relation to perspective. The oldest painters had learned that the rays of light are bent

downward as they pierce a surface of water; so that the foot of a man or animal seen in water seems raised, and his leg shortened from the point where it enters the water. This law seems to have been known even to the earliest Egyptians and the rudest Chinese painters. The ancient Greeks and Romans also understood that objects seen through vapor, especially white objects, appear larger than they are; chiefly, indeed, from the dimness of the outline which makes them seem distant, and, therefore, larger than they are from their apparent distance; but partly also from the law of refraction; a nice point in perspective to which Lionardo da Vinci has alluded. In fine, the careful study of the laws of optics, in these and others of its branches, is essential to the scientific practice of the artist's profession. Though genius in art seems intuitively to catch from observation of nature the laws of perspective, or practically to apprehend them, the Art-critic must master their theory.

Sect. 6. The Perspective of Shadows.

Every object in the sun-light by day, or in the moon or lamp-light by night, is accompanied by its *shadow*, more or less distinct as the light is stronger or weaker. Shadows in Perspective Drawing are to be distinguished from shades in Plane Drawing. A shade is the darkened portion of an object from which the light is cut off; the eye regarding only the single object thus darkened when shade is considered. A shadow can never be conceived without thought first of the object, perhaps a distant one, cutting off the light, and second, of the shaded object or that from which the light is cut off; the shadow being the whole long column of darkened space between these two objects. Shadows are caused by the fact that the rays of light emanating from the sun or any other luminous centre proceed in straight lines, and that whenever their rays fall on any opaque object the rays are interrupted; so that neither these rays, nor others passing near and bent from their course, illumine the space behind the object thus interposed in their straightforward track. Shadows may be entire or partial according as the light is more or less cut off. A shade may be caused on one portion of a body by its own interposition between the light and a part of itself; as the dark portion of the moon is shaded by its own body cutting off the sun's rays; while mountain peaks cast shadows on their own sides.

To represent shadows in perspective correctly three things must be observed; *first*, the position of the luminary; *second*, that of the object illuminated; and *third*, that of the observer. The position of the

luminary may be in front of the observer and back of the object, and thus the shadow be cast towards him; or the luminary may be behind him and the shadow of the object be behind the object; or the luminary may be at the observer's right or left, and the shadow therefore fall at his opposite hand.

The important laws of shadows as they relate to perspective are the following. The *depth* or darkness of shadows is in proportion to the amount of light of which they are deprived compared with that which illuminates other objects; the shadow cast by the sun being really less dark than that cast by the moon, though as compared with the illumination produced by the sun and moon's rays, the sun's shadow is the darker of the two. The *direction* of shadows is dependent on the position of the sun or other luminous centre; its elevation being of great importance in securing that particular length of shadow most favorable to the artist's design; the short shadows of noon-day giving an air of oppressive weariness, the long evening shadows a solemn and soothing air, while the medium of early day speaks of the hours favorable to action. The *length* of all shadows is in proportion to the relative size of the luminous centre as compared with the object interrupting its rays; if the luminous body be the larger, as the sun shining past the moon in an eclipse, or a man's body before a large fire at night, the shadow will terminate in a point where the rays of light shining past the smaller object, converge; if the luminous object be the smaller, as a lamp-light at night, or a beam of sun-light admitted into a room through a small aperture, the shadow will be of indefinite length; and so if the luminous centre and the intervening object be of the same size. The *shape* of the shadow will be a cone or cylinder, with its figure of the form of the object; either a cone converging to its apex, or a cone diverging towards its base, or a cylinder of equal dimensions throughout, according as the luminous centre compared with the object casting the shadow is of greater, less, or equal size. The *size* of a shadow at any given point will depend on the relative size of the luminous point as compared with the object casting the shadow, and also upon the distance between the object and the shaded spot as compared with the distance between the object and the luminous centre; the shadows from objects on the earth as men and trees being substantially of the same size as the objects themselves when cast on a wall near by, because though the size of the sun is immensely greater than that of a man on the earth, yet its distance from the man as compared with his distance from the wall is equally immense, so that the one coun-

terbalances the other. The *number* of shadows cast by any object depends upon the number of centres of light, whether of the sun or moon, or of two or more lamps in combination, added to the number of reflecting surfaces, as of mirrors, smooth waters and polished walls, from which the light of the central luminary is reflected.

In a drawing, as in nature, every object must be accompanied by its shadow; except it be in the rare case of the artist's taking a view on a cloudy day, when no distinct shadow can be perceived or traced. Indeed so dependent is art on the more striking contrasts of light and shade in nature that the pencil or brush cannot make an object seem to stand out from the canvass as real, unless the artist avail himself of a time when and of a point of view where the most advantage can be taken of the lights and shadows in nature. Both the elevation of the sun and the point of the compass at which it strikes the object or scene to be delineated are to be regarded; the angle of about 45° both above and in front of the picture being the best. In taking a portrait, therefore, the artist is careful in selecting a spot in his studio and an adjustment of his subject at an angle to the window such as will give him, not only the strongest light, but the deepest shade. So the landscape painter selects for each particular view he is to take that hour of the day, as nine o'clock A. M., or three o'clock P. M., which will give him the best light, or rather the best shade.

The important applications of the laws of perspective to shadows are these. In shadows of a near object on a wall, as of a portrait and of furniture on the sides of a room, the lines of the shadow must follow the laws of shade already mentioned as those of nature; the lines of light being parallel to each other when the light comes directly from the broad face of the sun, and diverging from the object when the luminous centre is but a point, as a lamp's light or an aperture in a window. In shadows thrown upon a horizontal plane, as the floor of a room or the surface of the earth, both the laws of shadow and of perspective are to be kept in view in the execution. When the shadow of an object falls on a broken surface and upon objects of greater or less height than itself the nicest care is requisite that the cylinder of shade follow its true line in nature and cast a shade of truly *proportionate* height or length, or of the *precise* breadth of the object on every other object or part of an object behind it. Ruskin specially suggests that though the shading of water is in the main to be made by parallel lines, yet great skill is requisite in varying the depth of shade according to the shadows

falling on the water, and also to insert the broken curves which indicate the outline of shadows on its face when smooth, or the ripples upon it where it is ruffled. In the study of shadows upon distant objects where lights from different reflecting surfaces and shadows and half-shadows meet and overlap in endless combination, the principles of aerial perspective come into consideration.

Sect. 7. Aerial Perspective, and its Relation to Chiaroscuro.

The expression *aerial* perspective is sometimes used in works upon art as distinguished from linear perspective. This term relates to the shading as distinguished from the outline of the perspective drawing. As distance not only diminishes the size but obscures the distinctness of objects seen, the copying accurately of the gradation of distinctness of view in representing objects in the background is the province of aerial perspective. It is called "aerial" perspective because the air, whether clear or hazy, has even more influence than distance in rendering a remote object indistinct; as is witnessed in portions of Italy, and especially in Egypt, where there is no rain or mist.

The term "chiaroscuro," as observed in the Chapter on Plane Drawing, is the word used in the Italian, the language of Art, to represent the meeting, overlapping and blending of light and shade in the landscape, as the sun's rays, or any combination of lights are reflected from different points with more or less directness and clearness upon each separate object. The shading of a single object, where perspective is not required, demands a practical acquaintance with the principles of chiaroscuro; otherwise the angles of the jutting corners and retiring indentations of an object with plane surfaces cannot be represented to the eye; and still less can the roundness of an object with curved surfaces of different sweep be so pictured that the alternate swell of the convex and depression of the concave will be made to stand out as in the object itself. In perspective a second end, in addition to that of the representation of precise form, is to be attained. When a man, a house, or a tree is drawn in the background the fixed size of these objects makes the proportion of their diminution in size a fixed measure of their distance. On the other hand, a rocky cliff, a river, a mountain, a cloud, has no fixed size; and therefore the space it is made to occupy in the drawing is not at all an indication of its distance. It requires a long and special training of the eye even in nature itself to determine the distance of such objects by their peculiar tinge or shade; so that by the distant blue

or the deep black, the beholder is able to judge rightly of the miles that intervene between the eye and the mountain, and to determine the shape and the depth of the valleys on its side. It is only the long trained eye of the huntsman on the prairie, and of the sailor on the ocean, that forms a just judgment of aerial perspective as it exists in nature. The acquirement necessary for the artist is a double task; since he has to learn the art, not only so as to be able to recognize it when seen, but also to copy it with the pencil that others may see it in his drawing.

It is worthy of special notice, that this is a distinct and new study in every different country and climate. As in one's own clime the distant hills look nearer of a morning after a long storm, and even after an hour's shower at midday, so the Englishman or Hollander, accustomed to a murky, hazy, or foggy sky, has no standard for measuring distances in the clear atmosphere of the American prairie, of the desert about Egypt, or of the sunny plains of Italy. The Englishman who has never seen the full round orb of the moon's reverse when between the eye and the sun in its first quarter, as by its own light reflected from the earth that dark orb is clearly seen in America, the Dutch painter, who, trained only in his sombre lowland, has never imagined the bright admixture of yellow overpowering the blue in the gay green of an Italian landscape, the artists of England and Holland must be a School distinct from the Italian, the American, and even the French, in landscape sketching; since the "aerial perspective" they have studied is so different. The attainment of comprehensive skill in chiaroscuro, and in aerial perspective, a method and a power adapted to all climes and in the same clime to all changes of day and night, of summer and winter, of clear and cloudy weather, is the rarest of all excellence in art.

Sect. 8. Curvilinear Perspective; and the relation which the actual curve of Perspective lines in Nature has to their representation in Drawing.

The subject of curvilinear, or "circular" perspective, as it is sometimes designated, has but recently attracted the attention of artists as a matter of practical study. Hogarth argued that the curved line is the line of beauty; that all the Creator's works, unlike man's, are executed in forms composed of curved lines; and that if there be any exception, it is the line of crystalization, or the path of a ray of light. In Hogarth's argument there is much of truth; for, as we shall find, in those models of Grecian architecture which are the

climax of man's attainment in conceiving and executing forms of beauty, there is scarcely a truly straight line to be found. In the Creator's handiwork, in flower, leaf, fruit, twig, branch, and even in the sloping height as well as the rounded sides of the tree trunk, in hill and vale, in mountain top and cloud, in the form of the round world and of the "grand o'erhanging canopy" of the vaulted sky with its circling stars, there is not, perhaps, a purely straight line to be met; while the human form, the master-piece of beauty has its myriad forms of grace wrought out in lines of varied curvature.

Even the exception hinted in the path of a ray of light, is in perspective no exception. In the photograph, which catches the flitting aspect of nature as it passes and stereotypes it, the lines of perspective, for instance in the roof of a long building in a view taken from its centre, are not made up of purely straight lines, but of lines slightly curved. We detect the fact in the copy; though we overlook it in nature. Careful attention will lead us to observe that the line of the floor of an extended hall does not, to appearance even, rise in a straight, but in a slightly curved line. An accurate observation, in fact, of natural appearances everywhere, in the landscape and the sky, indicates the same law of visual formation. Every point in each line in perspective is not only raised to a horizontal plane nearer the eye, but every point is also drawn inward to a vertical plane nearer the eye; for the very raising of each point in the line of perspective does actually bring the point nearer the eye, of course making it appear in a nearer vertical plane, and hence giving a curved appearance to the perspective line. This law on its large scale is recognized in the vaulted sky; for all men, as well as all artists, see the heavens as an arch. Its operation is observed in all mountain and balloon views; from which elevated points the landscape appears as a hollow basin; an aspect which the ablest artists have copied in all good birds-eye views. In nature and art alike all above and all below the eye is made to meet in the extended distance in elliptical, or at least in curved lines. And, moreover, though in drawings upon a small scale, this curvature is so minute that it need not be taken into account, yet nature herself, the only perfect artist, does even in the smallest picture taken in the photograph by the lines of her pencil, strictly regard her own law, that the curved line is the line of truth, if it be not the line of beauty.

The nature of the law of Curvilinear Perspective may be demonstrated by the principles of Geometry and of Optics entering into perspective; while, moreover, the precise measure of this curvature

may be fixed by an application of the principles of the Calculus. Suppose the observer to be standing at a distance of 200 feet in front of the centre of a symmetrical building 100 feet long and 40 feet high. It is manifest that while the centre of the front of the building is precisely 200 feet from his eye, each line in the remaining portions of that front, as he looks from the centre toward either end, is more than 200 feet from his eye; the ends of the building being about 206 feet distant. As now the space an object occupies in the angle of vision is less, in proportion to its distance from the eye, the apparent height of the building should be about one-thirtieth less at the ends than at the centre. The correction is in ordinary vision so instinctively made, that very few persons are aware of the fact, that they do see the line of the eaves of a long building sloping at a curve, that by careful attention they will become sensible that they thus see it, and that unconsciously to themselves they have the habit of correcting their own real impression. The photograph has no habit of this sort; it presents the fact as it is; and it reveals to our eye its own unconscious self-deception in supposing that it sees a straight horizontal line where, in fact, it sees a curved line arched upward.

The same law must apply to horizontal as to vertical lines. The horizontal line of the front immediately before the eye, or the line running about five feet above the ground, is at its centre 200 feet from the eye. The line, however, running along the top of the building, is about 203 feet at its centre from the eye. This upper line, therefore, must be shorter in appearance, filling, as it does, a smaller portion of the angle of vision, than does the lower line. The effect, therefore, must be to make the vertical lines at either end of the building seem to slope inward as they rise; a slope which the eye in the photograph perceives to be not a straight slant, but a curve.

It is manifest also that this appearance of curvature extends to the lines below the eye as well as to those above it. The vertical and horizontal lines alike, *immediately before the eye*, the one at fifty feet from either end, and the other at five feet above the ground are the longest; while the vertical lines of the two ends are bent inward at the bottom from a point five feet above the ground, the horizontal line at the base or underpinning of the building will appear curved upward at both ends, though proportionally less than the line of the roof or eaves. It is equally manifest that this same law will give a curve to every line out of the centre. The line of the top of the

windows will be curved, though less than the line of the eaves, and the line of the bottom of those same windows will also be curved though less than their tops; and so with each line successively from the top to the horizontal line directly before the eye. So the sides of the windows nearest the end will be less curved than the end line itself; and each line farther inwards successively less.

The effect of this general curvature is to make the face of a broad surface seem to be, not a flat plane merely rounded at the edges, but a bulging or hollowed curve, convex or concave towards the beholder. In general, whether looking from above upon the surface of a lake or a plain, or from one side upon the line of a distant road, river, or forest, or again from below on a broad ceiling or into the expanse of the heavens, this curvature seems to be concave towards the beholder; while for a small object it may seem to be convex, if it appear at all. The cause of this apparent curvature is probably this. We are so in the habit of correcting the impression made by the diminished visual angle at which we view a man, a house, a tree or any object of known height, that we do not judge of distance by it; we judge in part indeed by this diminution, more by the differing distinctness in outline produced by distance, but mostly by the number and size of intervening objects. When intervening objects are removed, as in looking over a river, there is no power in either the diminished size, or the indistinctness of outline of objects on the opposite bank to give us a just idea of the distance; and in throwing a stone, or in speaking to a man, we find we have very much underrated the distance. When now a line of men all known to be of equal stature, stand before an observer, with no intervening object between, he instinctively corrects the real impression made upon his eye by the visual angle at which they are seen; he ascribes to the men at the extremes of the line the same size as to those at the centre; and as when looking over the river, he imagines the more distant men on the extremes to be nearer than they are. If equally distant, as their known equal size naturally leads the beholder to suppose, the line of men would be in the circumference of a circle; but as the illusion is only partial their line seems slightly curved.

The law of this curve of the line seen in perspective is susceptible of geometrical analysis; the rate of its curvature is ascertained by the simplest form of the Calculus; and it can be laid off readily from the elements thus obtained. Suppose lines drawn from the eye to different points upon the horizontal line immediately before the eye on the front of the building above mentioned; the first line to the

point immediately before the eye, the second ten feet to the left of this point, the third twenty feet, the fourth thirty feet, the fifth forty feet, and the sixth to the end of the building on the left, fifty feet of course from the centre. Then the second, third, fourth, fifth, and sixth lines will each be the hypothenuse of a series of right angled triangles, the altitude of each of which is the first line, which we supposed to be two hundred feet; while the bases will be severally ten, twenty, thirty, forty, and fifty feet. The hypothenuse of each of these triangles is the distance of the eye from that point or from the vertical line running from the top to the bottom of the building through that point; and the length in perspective of that vertical line will be to the length of the vertical line passing through the first point, as two hundred feet, the altitude of a right angled triangle having a varying base, is to its hypothenuse. That hypothenuse is found by squaring the altitude and base, adding these squares, and extracting the square root of the sum. The curve may be drawn by laying off on a line as an abscissa divided into equal parts, ordinates which shall be to each other inversely as the square root of the sum of the squares of two quantities, one of which is fixed, while the other increases at the same rate as that abscissa. The curve may be traced through the termini of these ordinates thus laid off.[1]

Though this law of perspective has been recognized in quite modern times by scientific artists its principles have been little analyzed, and it has not assumed a practical form in art. Thibault remarks, "The horizon of nature is a circular line; but this line drawn on a plane horizontally at the point of view is a straight line." The faithful pencil of Nature, dipped in her own pure light, is truer than the eye of erring man; and in the curved lines of all her drawings in perspective she is teaching a lesson from which future artists may gather some instructive hint. Herdman has devoted a volume to prove that there is a practical application to be made of the principles of Curvilinear Perspective in Art. In his conclusion he expresses his confidence that "in views of large extent its use will give greater beauty and less distortion than rectilinear perspective;" and that

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[1] Applying the Calculus to the determination of these ordinates we should have the following. Taking a = altitude, x = base, y = hypothenuse, we have $y^2 = a^2 + x^2$; whence $y = \sqrt{a^2 + x^2}$. Differentiating $dy = \frac{xdx}{\sqrt{a^2 + x^2}}$ from which formula, the rate of variation in the ordinates of the curve with any value of a and of x is readily obtained.

thus "lateral extents and spaces hitherto totally unattainable in art may be wrought with *truth*, in accordance with what *is seen*."

Sect. 9. Binocular Vision, in its relation to Perspective.

As observed under Plane Drawing, Binocular or two-eyed vision has its most important application in Perspective. As the distance from centre to centre of the two eyes in ordinary persons is about two and one-half inches, any object placed directly before the nose is the apex of an isosceles triangle, whose base is the distance between the two eyes; which has hence been termed "The Visual Base." When a small object is placed near the nose, one eye views one side, and the other the opposite side of that object. If, however, the object be removed in a line directly between the two eyes, the two views will soon begin to overlap each other, until they become perfectly one. One important result of this *two-eyed* or "binocular" vision, in its bearing on art, as already observed, is the appearance of roundness it gives to the figure of the object seen; an effect which in a single object in Plane Drawing may be copied. In perspective, also, artists have understood and availed themselves of this binocular effect in giving *projection* and life-like *relief* to objects in the foreground.

The important effects of binocular vision in the execution of perspective, are the two following. The object thus placed very near the eye is very *indistinctly* seen; and that for the double reason that it is not in the focus from which a distinct image falls on the retina of either eye, and also that each of these images is the sight of only one eye. The object farther off, and in that focus, is the object most distinctly seen. Again, an object immediately behind the very near object is completely seen; as much as if the near object did not intervene; one eye seeing around and behind it on the one side, and the other eye on the other side. A careful attention to the impression on the eye will lead to the additional observation, that two separate images are recognized as they fall on the retina, that these two images seem to be before the eye, and that two projections of these images are thrown upon the background of a wall, or landscape, behind the object. The recent and important applications of this in painting are illustrated by the following history.

The great reformer in the revival of modern art, Lionardo da Vinci, wrote the following about A. D. 1500 as the foundation of one of his Rules in Painting: "Painters often despair of being able to imitate nature from observing that their pictures have not the same

life that natural objects have when seen in a looking-glass; though they both appear upon a plane surface. It is impossible that objects in painting should appear with the same relief as those in the looking-glass, unless we look at them with one eye; of which this is the reason. The two eyes looking at objects one behind another, see them both; because the nearer cannot entirely occupy the space of the more remote since the base of the visual rays is so broad that the second object is seen behind the first. But if one eye be shut, and you look with the other alone, the nearer body will entirely cover the body more remote, because the visual rays beginning at one point form a triangle of which the body nearer is the base, and being prolonged, they form two diverging tangents at the two extremities of the nearer object which cannot touch the body more remote behind it; therefore we can never see it." Da Vinci introduces a diagram to illustrate this; much the same as used by modern writers on binocular vision.

Lionardo applying this fact of binocular vision to the practical execution of art taught: "When a ball held before a wall is painted, the painted figure must cover the space behind it. Since, then, when seen with both eyes, the wall would appear behind the ball, the painter should place a mirror before the object, and paint it as it is seen reflected looking at the object with one eye only." In accordance with this teaching, after, as well as before the times of Lionardo and of Raphael, it continued to be the method of painters to regard and to paint the view presented to "monocular" or *one-eyed* vision; the right eye being naturally the one employed. Within the last half century the theory of binocular vision has been more studied. In England Sir David Brewster has written upon the general theory; Professor Wheatstone has applied it to the construction of the stereoscope; and James Hall has written upon its relations specially to art execution.[1] Hall's theory is in substance as follows. The true idea of the execution of a picture is this; *first*, all objects should first be constructed of life size as they appear to *both* eyes, and on a vertical plane passing through the principal part of the chief object, the eyes being directed to the principal object, and the "duplications and regulated obscurities" under which the very near objects are seen being introduced; and *second*, this life sized construction should be reduced to the miniature scale of the artist's design and be finished

[1] See London Art Journal, 1851—1853; and the North British Review, May 1852.

as seen by both eyes and with the "regulated obscurities" still retained.

In support of this view, Hall cites the experience and testimony of the best artists before the subject of binocular vision was scientifically analyzed. Those artists had observed, *first*, that the view of an object, drawn in perspective with one eye, has *less breadth* than if drawn with two eyes; and *second*, that a monocular view of an object gives no measure of the distance of the object such as is given by the view with two eyes. Again, the laws of binocular vision chiefly affect the execution of the *background* in Portrait Painting and in Historic Pictures, and the *foreground* of Landscape sketches; and these are the very portions of their work with which all students of art have found the most difficulty; a difficulty which the true theory of binocular vision in its relation to perspective so fully explains. The suggestions of Sir Joshua Reynolds, Hall thinks, indicate his appreciation of the directions for artists to which the present knowledge of binocular vision leads. He says: "Let the artist labor single features to what degree he thinks proper; but let him not forget continually to examine whether in finishing the parts he is not destroying the general effect. No work can be too much finished, provided the diligence employed be directed to its proper object; but I have observed that an excessive labor in the detail, has nine times in ten, been pernicious to the general effect; even when it has been the labor of great masters." Hall expresses surprise after all this experience of artists, that Sir David Brewster should maintain the pre-Raphaelite theory; that the eyes should be adjusted to every part of the picture separately; and that the artist should, to use his own words, "delineate every part of the picture, whether in the foreground, middle ground, or distance, with the same distinctness with which he sees it," when thus separately viewed.

The important result of his own theory Hall thinks to be the following. The law of binocular perspective is "that every line not parallel to the picture has two vanishing points and one intersection; and that the indefinite representation of such a line is found by drawing a line from the *intersection* to each of the vanishing points. The two vanishing points, for the purpose of duplication, are found by drawing a line through each of the spectator's eyes parallel to the original line, till they meet the picture one visual base apart measured horizontally on the picture, full-sized; in other words half a visual base to the left and right of any vanishing point obtained in the old monocular way. Every plane except the horizontal plane

through both eyes will have two vanishing points. The centre of the picture will be midway between the two vanishing points."

The consideration of the science that enters into the subject of both curvilinear and binocular perspective, so beautiful in their theoretic truth, too nice perhaps to have much influence in the practical execution of the artist's pencil, has the effect to train the mind to close observation. In practice the lines of perspective may be made straight and not curved, and the duplication of a very near object may be avoided either by not introducing it at all or by making it act a subordinate part in the picture. The knowledge of the real modification in our sight produced by curvilinear and binocular perspective will make better students and critics, if it do not make better artists.

Sect. 10. The History of Drawing in Perspective.

The ancient Egyptians, the Chinese down to modern times, and in general the people of all rude and but half civilized nations have failed in observing, or in applying the laws of vision to drawing in perspective. In the sculptures and paintings on the monuments of Egypt the most distant in a line of soldiers, the farthest of four chariot horses abreast, is drawn of the same dimensions with the nearest in the line; and objects in more distant fields are put in compartments in corners of the main picture without any apparent connection with it. In Chinese paintings either everything is put in the foreground, or if there be a background and the figures in it are drawn smaller, the gradation of the intervening space is not preserved, and the geometrical law of convergence in the lines of the picture is not understood or attempted.

Among the ancient Greeks the old geometrician Euclid presents principles which show that the principles of optics were to a certain extent recognized as they relate to perspective; and Geminus of Rhodes, the special home of Grecian art, an eminent mathematician of Cicero's day, treated particularly of the laws of Optics as they relate to art. In the following passage of Plato's Republic, a knowledge of perspective seems to lie at the basis of this beautiful allusion. "Imitation, or fiction," says Socrates, "is always inferior to reality or truth; it is an amusement, a pastime. A magnitude seen at a distance is not the same as when seen near to us. Objects strike our eyes in different ways according to the medium through which we see them. Our senses are deceived by color; and this deception is transferred to the mind. While the art of painting taking advan-

tage of our liability to this deception does not hesitate to practice enchantment and dazzle our eyes, the gods have given us for our aid a *rule* and *measure* to protect us against such deceits. If we take them always as our guide, we shall see things as they are; so that what is but apparent or plausible, and what is but false magnitude will no more exercise an influence over us, while what is correct and real will alone reign in our soul." Vitruvius the Roman writer on the history of art, when treating in the time of Augustus of the principles which originated the Ionic order in Architecture, represents the knowledge of perspective to have been coëtaneous with the acting of the drama. He relates; "Agatharsius, at the time when Æschylus taught at Athens the rules of tragic poetry was the first who contrived scenery; upon which subject he wrote a treatise. After him Democritus and Anaxagoras went still further in that way, showing the power of imitating nature by making all the lines to vanish to one point as a centre, when viewed at a fixed distance; by which means they were enabled to represent in their scenery on the stage the image of real buildings as they usually appear to the eye, and that whether they were painted on horizontal or upright surfaces; and thus they exhibited objects near and remote." This was the early application of perspective to *scenic* representation; which, as now, must have combined several rude paintings so arranged behind each other as to give the appearance of an extended view in the background. The *paintings* of the ancient Greeks, in general, did not require a background; consisting, as they did, chiefly of single figures or of architectural and historic groups, into which perspective could not to any great extent enter. That their painters however understood and taught perspective is evident from Pliny's statements as to Pamphilus, one of the early Greek teachers of Painting: "He was learned especially in arithmetic and geometry; without whose principles he declared that art could not be perfected."

When in quite modern times landscape painting began to be favorite, treatises on the science of Perspective appeared whose thorough mastery of the subject could have originated only in a knowledge before perfected. The very earliest work on perspective in this new age, that of the Italian artists Pietro del Borgo, who died in 1443, and of Bartolemeo Bramantine, professed in its very title to be "Rules of Perspective derived from Antiquity." Lionardo in Italy, and Albert Durer in Germany, laid down in their age the main rules which guide artists of the present day.

CHAPTER III.

ENGRAVING; THE TRANSFER OF DRAWINGS TO ENGRAVED PLATES FOR THE MULTIPLYING OF COPIES.

In the progress of human improvement the applications of an art come often to overshadow and almost hide from view the original which gave it birth, and on which it depends; the parent stock being lost among the scions of later growth. Books multiplied by the press make us forget the day when the pen copied everything; yet the *printed* page is but the copy, and the written page must be the original. Engraving, and its kindred arts, but copy that of which the drawing pencil has given an original; and photography, in its various branches, only compels nature to the imposed toil of pencilling her own face. There are many arts allied to drawing; but they all rest upon it as the fundamental art.

Sect. 1. The Nature and History of Engraving.

In the study of an art proper we naturally consider the processes before tracing the history of its practice. It is the reverse in our consideration of an invention; for an invention is the application of the art already perfected; and its history is the best illustration of its nature. Engraving is an invention originating when drawing as an art was so perfected that men sought some method of multiplying its superior creations. An engraving is a drawing cut into the material on which it is executed; as wax, clay, wood, stone, or metal. Engraving as an art manifestly follows drawing; because every engraving in order to be cut into any material must first have been drawn upon it. Engravings are executed for two purposes; first, to be themselves works of art for individual observation; second, to be used merely as a mechanic's copy whose impressions are to be works of art multiplied for numerous observers. The first kind of engraving is of very early origin; it is alluded to by Job before Abraham's age,[1] and is preserved now in the monuments of Egypt and Assyria of the same age. The second kind of engraving existed in its germ in the signet rings of the ancients worn even by the Pharaohs of Joseph's time, and also in the dies from which the earliest rude coins must have been struck; allusions to which with the image of a sheep upon them we find in Abraham's day,[2] and specimens of which of a

[1] Job xix. 24.

[2] Gen. xxiii. 18; xli. 42.

more elaborate character are found now in the oldest tombs of Egypt. Engraving of the former class in its increasing perfection became the germ of the art of sculpture; while the exquisitely beautiful specimens of the second kind executed in modern times have become the most finished master-pieces in the art of drawing.

To the first class belong the long and numerous line of celebrated engravers mentioned in Grecian and Roman history. The materials on which they worked were metals and precious stones; and the articles adorned were cups, signet rings and like trinkets. Their work often was merely geometric figures, or foliated decorations; but sometimes the finest effects of statuary and painting, both ideal forms and portraits, were attempted on precious stones. The consideration of these works belongs more especially to the subject of Decorative Art; but the choice relics of Grecian engravings are among the richest treasures of the fine arts proper. Even the decorators of armor, and rings, and smaller articles described by Homer, whose names are lost to history, were advanced in the art. Mnesarchus, the father of Pythagoras, the philosopher, lived in the time of the earliest able artists of Greece; and to the same age belonged Theodorus who wrought the celebrated ring of Polycrates. Herodotus at his early day mentions maps engraved on metal. In the days of the philosophers, Agathermus engraved the figure of Socrates on a precious stone; and Plato extols Diodorus who wrought a Satyr upon silver. Under Alexander able engravers were numerous; and the proud conqueror by an edict forbade any one but Pyrgoteles to engrave his image. Rome had its masterly engravers, nearly all Greeks, after the decline of Sculpture; who cut on precious stones exquisite portraits of the emperors from Augustus onwards, as well as ideal figures.

The engraving of plates for the purpose of multiplying copies of drawings has much the same relation to stereotype printing that picture writing has to alphabet writing; the former preceded the latter. In the oldest tombs of Egypt, cones of clay, with lines of hieroglyphics or picture writing are found; which tablets must have been made from a wooden or metallic engraved plate, precisely like modern printing taken from stereotyped plates. The same art is on good authority said to have been known in China as early as 1120 B. C., or during the time of the Hebrew Judges; a record worthy of confidence since Egypt, India, Assyria and China are found to have had much the same arts in most ancient times. The art was probably never lost in the East or West. The modern art seems to

have originated in Italy, and was first employed in the copying and multiplying of small pictured cards requiring very little art; as playing cards and pictures of saints executed in dark and colored figures. These seem to have been struck from wood plates as early as the Thirteenth Century in Venice; and the use of metal soon followed. The material first used as the copying ink, introduced at Florence, was soot mixed with oil.

Sect. 2. Xylography or Engraving on Wood.

The simplest material for engraving is wood; whence the Greek word *Xylography*. The best woods are box, beech, and mahogany. The engraving is executed on a section cut across the fibre of the standing wood. The picture is first drawn with a pencil on thin or tissue paper, oiled so as to be transparent. A second paper, smeared upon one side with white, red, or black chalk, is laid with its chalked face downward upon the wood to be engraved; and over it is placed the first paper with the drawing upon it downwards. With a hard-pointed style the lines of the drawing are traced through the two thicknesses of paper upon the wood, so as to leave its lines in chalk upon the face of the wood. With a fine chisel a small groove is cut along both sides of each line in the drawing, so as to leave a thin raised edge corresponding to the lines of the drawing; and the intervening parts of the surface of the wood are scooped out with a gouge. The block thus prepared is used as a stereotype plate in printing; the raised lines only, like the type, being touched by the ink. As the drawing was reversed when traced on the wood, and as thus the engraved block is the reverse of the drawing, the print upon the paper is the reverse of the engraving on the block, or the original drawing restored again. The more experienced engravers will copy the drawing directly and in reverse upon the wood.

As already mentioned, wood-engraving existed as early as B. C. 1120 in the printing of the complicated and picture-like characters of the Chinese from engraved blocks of wood. This is proved by the following historic fact. The great Sacred Book of the Chinese called Y-King or the "Book of Changes," re-published by Confucius about B. C. 550, composed by Fohi one of the earliest Emperors of China, in whose age the Chinese system of writing was incomplete, is known to have been first put into a connected form by the Emperor Ven Vang of the Tscheou dynasty, about B. C 1120. In this work, then first published, occurs this comparison; "As the ink which is used to blacken the engraved characters can never become white, so a heart

blackened by vices will retain its blackness." It is manifest from this allusion that the art was known in the time of the compiler Ven Vang, even if it was not in the earlier age of Fohi. The modern process is cited more than a century ago by one of the Jesuit fathers in China; and may be now witnessed by the foreign resident. The entire page of a book to be printed is written carefully on thin paper which permits the writing to be seen on the opposite side. This page is then glued with the written face downward upon a block of wood of the apple or pear tree, well smoothed and cut to the size of the page. The engraver then cuts the block in the same manner already described as that pursued by European engravers.

The art of engraving on wood was probably, as already intimated, introduced into Europe in the twelfth century; being brought from Southern or Eastern Asia by the Venetian merchants who penetrated to the ports of that distant region. At first, the execution was extremely rude; and Germany has the honor of its improvement. Only the outside border lines were cut upon the wood and printed upon the paper; the entire figure within the exterior outline being filled in by the colorist. The next step in the progress of the art was to introduce the inner, as well as outer lines, tracing limbs and features; the shading, however, being left for the finishing touch of the artist. Still later, a species of shading by dots was added; until at length a German engraver named Wohlgemuth, began to put in the cross-cuts and hatchings which formed the shading of the drawing to be engraved.

It was in the low country, however, of Holland and Flanders, among the Flemish artists, that engraving became truly a Fine Art. Its progress to perfection may be traced by examining German engravings between the eras of those great masters Van Eyck, A. D. 1395, and Albert Durer, A. D. 1495. The clog upon its improvement as an art was the extreme difficulty of cutting the nice cross lines of a sufficient thinness, and the spaces between to a sufficient depth, to give at once fineness and clearness to the impression. The skill of Albert Durer overcame in a remarkable degree this obstacle to success in wood engraving; and the blocks engraved under his auspices, if not by his hand, are still preserved as monuments of triumph in this art. Finally the genius of Holbein gave almost perfection to the art; introducing the finest of lines and most delicate of shading which characterizes the celebrated prints of his published at Basle, between the years A. D. 1520 and 1540. Those of the "Dance of Death," forty-one prints in all, published at Lyons,

France, in 1538, seem to have been the climax in the perfection of wood engraving; of which a French Editor of a new issue, made apparently about the time of the death of Holbein, who deceased in 1554, says, "To return to our 'Cuts of Death,' we now very justly regret the 'Death' of him who has designed such elegant Figures; exceeding as much all the Examples hitherto, as the Paintings of Apelles, or of Zeuxis, exceed those of the Moderns." In later days the half shading of nicer engravings, has been introduced by the application of a second block, whose print is laid upon the already prepared outline.

Sect. 3. Chalcography; or Engraving on Copper.

The art of engraving on copper, and other metals, was known as we have observed, in very early times; though the engraved maps mentioned by Herodotus were not like those of our day, designed for printing copies. The word *chalcography*, like *typography*, is a scientific term of modern times put for convenience into the Greek, the language of technical terms, that it may be common to men of all nations engaged in the pursuits of science and art. The ancient Greeks had themselves numerous similar compounds; as *chalchoergos*, to designate the coarser, and *chalchotypos*, the finer artificer in brass or copper.

The ancients, however, of every cultured nation were familiar with the method of taking impressions upon wax with signets engraved on gold or precious stones. These were in relief; the soft wax being pressed into the depressions in the engraved seal and corresponding elevations thus being obtained in the wax. The idea, however, that ink might be made to fill the cavities of the engraved plates while it was carefully removed from the remainder of its face, and that the pressure of the plate upon parchment, or other material, might cause the fibres of the sheet to be so forced into the depressions of the plate as to receive the distinct lines of the engraving in ink, seems not to have occurred to the minds of those accustomed to wood engraving and to print impressions from raised type.

It was by a happy accident that the discovery was made that prints might be struck as readily from depressed, as from raised lines. Among the arts of adornment for chased silver and gold wrought upon chalices, sword-hilts, etc., that called *niello* was extensively practiced in Italy. It consisted in filling the depressed lines of the carved or embossed silver or gold with a fused compound of silver and lead, which melted and ran into the lines prepared for it,

turned black and thus gave the outline of any figure desired. A servant woman of Tomaso Finiguerra, having accidentally laid a wet cloth on a piece of niello in his study, the print on the cloth when removed suggested to that artist the idea of filling the lines of an engraved copper-plate with ink, and printing from it as from a wood-plate. The art became in time quite perfect in Italy; while in Germany it made slower progress; even Albert Durer, so skilful in wood engraving, failing to attain the grace of the Italian copper-plate engravers. In both countries this style of engraving was for a long time restricted to outlines; no landscape background or half shade being introduced.

Copper-plate engraving embraces several varieties. The simplest method is first to cover the prepared copper-plate with a very thin layer of white wax; then to lay a copy of the engraving or drawing to be executed on the wax, and to subject it to a heavy pressure, so as to leave its outlines upon the plate; next, to remove the paper of the transferred engraving or drawing by moistening and gentle rubbing; afterwards to expel the wax by heating the plate; and lastly, to cut the picture left upon its surface into the copper with the graver. The point of the graver is triangular or pyramidal in shape; and being inclined to one side in cutting the copper, it leaves a depression smooth on one side, but having on the other a rough raised edge, or bur, which must be removed by the scraper, formerly styled a burin. Faint parallel lines for the shading of clouds, etc., are cut with a pointed instrument drawn along the edge of a ruler. The yet fainter shades are scratched in with a needle. The polish of the plate is completed by rubbing with olive oil. The *depressions* in the engraved copper-plate, receive the ink; and in this respect the metallic plate engraving is the counterpart of the wood-plate engraving.

One part of the process of engraving on copper is called *stippling;* a word from the Latin *stipula* or stubble. It consists in puncturing the surface of the plate with dots made by the point of the graver; the number of the dots increasing the depth of shading. This part of the work of engraving, designed for particular portions of nearly all engravings, became in time a style of art; and a favorite in England in the latter part of the last century. It has the advantage of giving a peculiarly soft appearance to the picture; and is used in the best modern engravings to represent human flesh, and the more delicate flowers. Many, however, regard the best line engravers as the true masters in the art. The most successful copper-

plate engravers have employed their own chosen modes of shading; using at pleasure lines or dots representing different objects. The crossing of the lines at acute angles, forming rhomboidal or lozenge-shaped interstices, however, are generally used in representing objects in landscape views, as land, cloud, water in agitation, etc.; the angles being more acute as the shading required is darker; while delicate substances, as fruits, flowers, human flesh, etc., are usually softened by dotting; or, if the engraver employ lines instead of dots, they are made to cross at angles nearly, though never quite, right angles.

The delicate shading called *mezzo-tinto*, or half tint, executed on copper-plate, is said to have owed its origin to Sir Christopher Wren. It is attained by the use of a small steel wheel with a notched edge of sharp teeth; which, when rolled over the plate with a pressure, more or less heavy, gives regular and superficial indentations which receive slight amounts of ink, and give to the print a delightful evenness and softness of aspect.

Sect. 4. Etching; Engraving on Copper by Acid Reaction.

A method of copper-plate engraving invented about forty years after the art itself began to be practiced is called *Etching*. To prepare it for the etching, the plate is heated over a spirit lamp, and is then covered with a varnish specially adapted to its purpose. Upon this varnish the copy in pencil, or ink, is transferred, and the engraver traces the entire drawing, both the outline and lighter shading, with his graver, cutting only the varnish. A solution of *aqua fortis*, or nitric acid, is then poured over the plate; which eats into the copper along the lines where the varnish is removed. When the acid has stood long enough to produce the light shading it is poured off, and the plate is washed with water and dried; after which the parts of the picture which are to remain of a light shade are touched with the varnish by means of a brush. The shade next darker is then produced by pouring the acid again upon the plate and allowing it to stand until this new shade is secured by the deeper corrosion of the plate; whose greater depth, of course, enables it to take up a greater quantity of ink when used in printing, and thus to deposit on the paper a darker tint. By repeating this process, any number of shades may be produced. There is a double advantage in the method of etching over ordinary plate engraving. The labor is diminished; the acid doing the work of the graver; and thus cheapness is secured. Again the eating of the acid forming a regular depression, the distribution of the ink is more uniform and the

effect is therefore more perfect. Etching has for these reasons become specially in use for ordinary landscape engraving. The ease and accuracy with which copies of the finest works of art could be multiplied, and thus brought to his studio, made this style of engraving a favorite with the artist at the era of its invention.

The *aqua-tinta*, or water-tint, a species of Etching, is so called from the resemblance of the copies done in this style to drawing done in water-colors with "India Ink;" an article used for ink in China and India which seems to be made of animal glue and lamp-black. In aqua-tinta the light shade is first produced as in etching. A solution of resin, or of Burgundy pitch, in alcohol, is then poured over the plate. As the alcohol rapidly dries off, the resin is left in dots or granulations over the entire surface. This is the *first*, or lightest shade; and the dots of resin remaining fixed during all the future process, preserve this light shade in dots. The portions of the plate to receive the darker shades are then covered with a gummy syrup called the bursting-ground, which will burst when immersed in water. The whole is next covered with varnish, as in etching. Water is then poured on the plate; when in about fifteen minutes the gum breaks and exposes the plate on all the portions which are to receive the deeper shade. The nitric acid is then poured on the plate a second time, as in etching. The granulated or dotted light spots amid the dark shade preserved by the resin gives a delightful softness to the aspect of the engraving which has made it a favorite for the background in portraits and night-scenes.

Sect. 5. Siderography; Engraving on Steel.

Steel engraving more truly than copper-plate, was unknown to the ancients; its Greek name being of modern invention. Though early suggested as a metal the most desirable for engraved plates, steel was little used for engraving, until the process of alternately softening and hardening the plates was discovered. The great demand for costly engraving in bank-notes, felt from the time that paper currency with the modern system of banking was introduced, made the recently known method referred to come into immediate and very general use. The perfected invention is attributed to Mr. Jacob Perkins of Mass., about 1808. The engraving is first executed on a hardened steel plate. A cylinder of soft steel is then rolled over the engraved plate under a heavy pressure until the soft steel has been pressed into the indentations of the hard plate forming thus on the soft cylinder a raised counterpart of the engraving. This cylinder

is then hardened for the purpose of serving as a punch in the making of copies of the engraved plate from which it received its impress. These copies are made on soft steel; which when hardened become each of them a plate capable of furnishing from 50,000 to 100,000 impressions. The great labor and artistic skill which can thus be bestowed on the original plate, and the consequent expense as well as skill required in counterfeiting, forms a most important safeguard in banking. The vast multiplication of banks in this country, as compared with England or any other country of Europe, has made the United States to take the lead in the most exquisite perfection of the art of engraving on steel. A contrast more striking can hardly be found in the world's history than is seen by comparing the Continental bank-bills of eighty years ago with the ordinary issue of hundreds of banks now scattered over our States. While employed thus for bank notes, steel plate is employed more or less extensively for the illustration of works of popular literature, such as Monthly Magazines having an extensive sale. For this purpose the soft, or uncarbonized steel is used. While a copper-plate is worn out in printing 5,000 or 6,000 impressions, the soft steel will print nearly or quite 100,000 copies; a number which may be increased by hardening, or carbonizing the engraved steel-plate.

Sect. 6. Lithography; or Engraving on Stone.

Engraving on stone, or *lithography*, in its primitive form is a very ancient art; being earlier mentioned, indeed, than engraving on wood; though the use of stone as a plate to be engraved for printing purposes is of later date than wood-plate engraving. There are two methods of preparing the plate for this purpose; the one corresponding to *copper-plate engraving* proper, and the other to *etching* proper. As an engraved plate for printing purposes, a hard stone is employed; the lines are cut upon it as upon copper-plate, and the depressions receive the printer's ink.

The method of preparing the stone corresponding to etching is quite a modern invention, commended by the ease and cheapness of its execution. It is said to have originated with Sennefelder, an actor of Munich in Bavaria. The stone used for this purpose is calcareous limestone; a stone found in Bavaria and Hungary, as also the white lias of England being specially adapted to this purpose. The drawing is executed on the stone with an oily or resinous paint; which from its chemical affinity adheres tenaciously to the portions of the stone covered by it. More commonly the artistic design or

letter-copy to be lithographed is drawn or written upon paper with the paint just mentioned; and this paper copy is then transferred to the stone. A double advantage is thus gained; the copy which must be executed in reverse, or back-handed, if drawn directly upon the stone, is made in *natural* order upon the paper, and thus becomes a reversed copy when transferred; while, moreover, any error committed in the original drawing is a loss only of the paper, whereas if committed upon the stone its whole face would require a new chipping, facing and polishing. When the stone has thus received the impress of the paint from the drawing, the action of vitriolic acid is employed to eat away the stone where it is not covered with the paint. Thus prepared, the stone, when about to be used, is kept wet with gum water. The ink is composed of an oily soap mixed with lamp black; which when applied adheres to the portions of stone already covered with the paint for which it has an affinity, while the portions soaked with water, for which the ink has no affinity, are left free from ink. The number of copies which can be made from a stone thus prepared is almost incredible; the stone being almost as durable as a steel plate. A later suggestion has led to the employ of zinc plates instead of stone. The zinc plate is prepared as the stone by writing upon it with the oily ink; for which this metal has a strong affinity. Dipped, when the drawing is completed, in Gallic acid, the uncovered portions of the zinc lose this affinity for the ink; after which the plate is also washed with gum water. The zinc plate is said to be preferable to the stone, because the acid on the stone continues its action, and thus injures the finer lines, while upon the zinc the action of the acid is exhausted at its first application.

The chief advantage of lithography over any other kind of engraving is the rapidity and facility with which coarse prints may be obtained. It is for this reason resorted to when haste is required; though it cannot be employed for the inserted engravings worked in with the type in newspaper and magazine illustrations. The hastily prepared maps of the U. S. Coast Survey, which it is necessary to have early in the hands of navigators, are printed from stone; but their finished work is engraved on copper-plates.

Sect. 7. Printing of Engravings; the Wear and Renewal of Plates; Proof Impressions and their Graduated Value.

In printing from engraved plates the face is subjected to a heavy pressure which has the effect gradually to wear and obliterate the outlines and make the impression indistinct. This wear is less on

the raised edges of wood and other surfaces which print from relief, like ordinary type, than it is on copper and steel which print from intaglio or depressed lines. Two causes control this wear; the durability of the material of the plate, and the amount of pressure requisite to secure the impression. Relief surfaces, as wood and type metal, which receive readily the ink from the roller passed over them, require far less weight of pressure in printing than do copper and steel plates. Stone, also, which prints from a relief or an adhesive raised surface, is like other reliefs in respect to the pressure required. Copper and steel prints, however, into whose shallow lines the ink must be rubbed with great care by the workman's hand, require for nicety of impression the greatest pressure to which by combination of mechanical powers the workman's arm is adequate. The comparative softness of copper, which makes it most desirable for finer work when but few copies are required, renders it undesirable for extensive printing; since not more than from 1,000 to 5,000 impressions of varied qualities of excellence can be obtained from a copper-plate. Steel plates, as stated, which require the same pressure as the copper, will give even 100,000 sufficiently distinct impressions; and are therefore chosen for the numerous copies required in popular literature of the day having an extended sale.

As the engraved plates are from the causes mentioned gradually worn, two features of the work of printing engravings become important. The constantly growing wear of the plate produces a constant deterioration in the distinctness and value of the successive prints. Though in ordinary engravings this effect is little regarded by common observers, in the higher works of the Art it is of the greatest importance as fixing the value of first and second hundreds in the succession of copies. The name of "proof," taken from the language of common printing, has been employed for the purpose of designating this graduated depreciation of prints. As the "press-proof" in book-printing is the first finished impression when all the author's and compositor's corrections are made, so in printing engravings, "press-proofs, first-proofs, engraver's proofs," have been used as terms indicating the earliest and most distinct impressions from engraved plates. Some of the more celebrated engravers, as Raphael Morghen, with a somewhat questionable ambition both in the artist and his patrons, have made it a condition of subscription to their superior works that not more than 100 impressions should be taken; and that then the plate should be broken up, so that no infe-

rior rivals could take from the exclusive privilege of the first purchasers, or from the first-rate merit of the artist.

The gradual obliteration of the outline of copper and steel engraved plates is in part practically offset by the use of a stiffer ink on the plate of the printer. The ink, made of lamp-black and burnt linseed oil, can be rendered more adhesive so as to be retained in a more shallow line by increased burning and rigidness of the oil; of which there are four degrees, weak, medium, strong, and very strong. When, at length, however, the wear of the plate is such that the obliterated lines will not take ink of any amount of stiffness, the plate itself must be retouched, or thrown aside.

Sect. 8. Renewal of Plates; Electrotyping, or the Multiplying of Engraved Copper-Plates.

We have observed how the importance of having a durable plate has led to the use of stone, whose coarse texture is nevertheless unfavorable to the execution of the finer lines of engraving; and how in the alternate softening and hardening of steel the renewal of plates without the great cost of new engraving is secured. The almost limitless demand for maps of coasts and harbors has made it important that copies of the finely engraved copper-plates from which they are printed should be readily multiplied. This is done by what the French chemists called Galvano-plastie, and the English Electro-Metallurgy.

Shortly after the invention of the Voltaic pile it was observed that the metals in acid solution are electro-positive, going over when decomposed by electricity to the negative pole of the battery. As early as 1801, Wollaston, in England, observed that a silver coin placed at the negative pole of the battery would be coated with copper when immersed in a solution of sulphate of copper. In 1805, an Italian chemist gilded silver by the same method. It was not however till 1837 that the idea of electrotyping was suggested by Spencer of Liverpool, England; who observed that when a drop of varnish was accidentally spread upon the surface of a copper coin exposed to the battery there was no coating at the point thus covered. The idea of copying coins, medals, etc., in reverse, was thus suggested; which has since been employed for the copying and reproducing, to any number, of the plates used in printing the most elaborate and finished specimens of copper-plate engraving.

The important and difficult thing to be secured is the coating of the surface to be copied with a material so thin, and yet so uniform,

that the nicest lines will be left open for the copper to enter; the coating at the same time preventing the union of the plate and of the copy into the same mass. The material first used was grease, or oil, rubbed upon the plate so as to leave the minutest possible thickness. The best article to secure the necessary thinness, is that suggested by Mr. George Mathiot, of the U. S. Coast Survey; iodine in solution with alcohol. A single grain dissolved in a quart of alcohol spreads over such an amount of surface, that when the alcohol is dried out, there is left a stratum of iodine so thin, that no less than 400,000,000,000 layers would be required to make an inch in thickness. By this method, two important ends are attained; first, a separating stratum is secured whose extreme thinness allows the copper to settle into the nicest hair lines; and second, a perfect intervening coating of iodide of copper is formed which prevents the two plates from uniting at any point.

This method is employed by the Topographical and Hydrographical Bureaus of the U. S. Coast Survey, for the purpose of multiplying the engraved copper-plates from which their finely executed maps are printed. The original plate, which in the larger maps has required ten or twelve years labor on the part of the engraver, is immersed in the bath having sulphate of copper in solution. A set of powerful galvanic batteries are made to communicate with the plate thus immersed on its upper or engraved face; which has been previously washed with an alcoholic solution of iodine. The copper gradually deposited, penetrates the nicest lines made by the engraver. The time necessary to acquire a deposite of the requisite thickness, about one-eighth of an inch, is ninety hours, or nearly four days. When taken from the bath the jar of a slight blow by a hammer breaks the connection through the entire cleavage preserved by the minute film of iodide of copper formed between the two; and a perfect raised counterpart of the original engraved plate is thus obtained. This new plate, the reverse of the original, is taken as a positive; from which negatives, or engraved plates like the original, are obtained by depositing it, as its fellow before was, in the copper bath.

Among the ingenious applications of this same art, as it relates to engraving, is the construction of a stereotype plate from the cheap wood engraved for newspaper and handbill illustrations. The wood, engraved as it is for printing, is pressed into wax so as to form a mould, with depressions the counterpart of its elevated portions. In this mould, a thin copper deposite from the action of the galvanic

battery is obtained; into which melted type metal is poured, giving a cast with a copper surface, the fellow of the engraved wood. From this more durable and delicate material the cuts are printed as from the wood.

Sect. 9. The Place of Engraving among the Fine Arts.

The Art of Engraving, allied as it is to Drawing, may degenerate, it is true, in professional hands, from the high dignity of a "*Fine Art.*" There is no necessity, however, that Engraving, because in its various branches it is practiced as a *useful art*, should therefore cease to be studied and presided over by artists of true genius. So honorable a place has Engraving come to occupy, that its higher departments are restricted in Europe to those who have taken a thorough course of training in Academies of Art. In the Academy of the Fine Arts, for instance, at Dusseldorff, the aspirant for future practice, as an engraver, is required to pass through all the schools organized for pupils in painting, except the school of Composition. This demand is one called for by the art itself; for next to the skill required by the great painter and sculptor, must be that of the engraver, who shall so enter into the spirit of a great master, as to be a true interpreter and translator of his work upon an engraved plate of wood, of stone, or of copper.

Burnet, urging the dignity of line engraving where the artist's genius may be shown, as opposed to the mere mechanic's trade of etching and mezzotint, says: "We must always bear in mind that an engraving is not a *copy* of a picture; it is a *translation;* and as a picture is possessed of three properties, outline, light and shade, and color, no print can be a proper transfer, unless something is given as an equivalent for this last. Hence the variety so pleasant and effective in line engraving." "A line engraver expresses the luminous and prominent parts by a series of short dots, as if the lines were crossed by touches of white chalk; while in the shades and retiring portions, his lines are smooth and undisturbed, thus giving the very quality required; while the mezzotint engraver has nothing to substitute but the scraping away of the furred or rough coat of his ground which retains the ink, thus giving emptiness instead of solidity, and retiring qualities in his lights in place of projecting."[1]

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[1] Burnet's Essays on the Fine Arts, London, 1848, pp. 134, 148.

CHAPTER IV.

PHOTOGRAPHY; OR DRAWING BY LIGHT.

The art of Photography is assuming a constantly increasing importance in connection with Drawing. Though every effort thus far made to copy *color* by the power of light has failed, yet the pencil of the sun's ray is so unerring a copier of form, that photography has taken the place very extensively of engraving in the multiplying of copies both of drawings, statuary, and paintings; while photographed portraits, colored in oil, have perfect truth in outline and shading, and receive color of a character constantly improved.

Sect. 1. The coloring influence of Light, which led to the Art of Photography.

The effect of light in blackening the chloride of silver, (popularly termed hornsilver), was known to the alchemists of the Middle Ages; and probably to the famed Magi of Ancient Egypt, Assyria and India, who had such extensive knowledge of metallic compounds, that they sought for one which should lead to the production of gold. As early as A. D. 1722, a French chemist, named Petit, referred this effect to the crystalization of the metallic salts produced by the influence of light. Between 1775 and 1800, several German chemists investigated the differing effect of the different colored rays of the solar spectrum in producing the black tint on paper saturated with a solution of chloride of silver, and ascertained that the violet ray produced the effect after fifteen minutes' exposure, while the red rays required twenty minutes.

About 1800, Wedgewood and Sir Humphrey Davy conceived the idea of copying paintings by the action of light on paper saturated with a solution of nitrate of silver; and succeeded in getting a copy in two or three minutes. Of this effort, Davy wrote in 1803: "All that is now required to render these experiments as useful as they are interesting, is to find a way of preventing the subsequent coloring of the white parts upon exposure to daylight." In 1812, nine years later, the existence and properties of iodine, so called from its violet color, was discovered; an agent found to be most efficient in giving to the metallic salt an increased sensitiveness to the action of light; and in 1819, seven years yet later, the discovery of the hypo-

sulphite of soda, by Sir John Herschel, realized the desideratum of Davy, an agent which arrested the chemical action of light on the salt, and thus prevented the farther discoloring of the plate when the picture was taken.

Meanwhile, in 1814, Niepce a French chemist, the real author of Photography as an art, began his experiments. In 1827, after thirteen years of persevering effort he obtained photographic pictures; and in 1829 he communicated the result to Daguerre a French artist. Niepce died in 1833; and Daguerre continued his experiments till 1839, when he astonished the French Academy by the report of his perfected invention. At that time, however, twenty minutes was required to take a picture; and no living object could be copied owing to the difficulty of securing a quiet position so long.

Sect. 2. The Daguerreotype; and the early Applications of Photography.

The original process of Daguerreotyping, substantially the invention of this artist from whom it was named, though since his day modified in many particulars, was as follows. The copper-plate, silvered by galvanism, was held over a box of iodine heated so that its vapor would rise to the plate. The iodine fumes forming iodide of silver on the plate changed its color first to a straw, then to a gold, then to a rose, then to an indigo, and finally to a blue tint. The blue tint was found to render the plate the most sensitive to light, allowing an impression to be obtained in about two minutes. At a later day the plate was dipped in water having bromine, or both bromine and chlorine in solution; when its sensitiveness was so increased as to receive an impression in a few seconds.

The *camera*, not materially changed in the progress of the art, consists of a box having a double lens as an object glass in a tube, and a dark square chamber in the rear through which the prepared plate is thrust in a slide. The plate is protected from the light by a sliding metallic cover, while the tube of the object glass is also darkened by a cloth or metallic cover. In the early experiments it was found that the large lens required in daguerreotyping admitted such an amount of light into the camera as greatly to prolong the time required to take a picture; which difficulty was avoided by covering the orifice of the tube before the lens with a brass cap having a circular opening in the centre just sufficient to admit the rays of light coming from the object to be photographed.

The light thus admitted into the front of the object tube passes

through it into the camera. When the object to be copied is placed in the best position for taking a good picture, the metallic plate, now prepared, is brought from a darkened room covered by a slide over its face to protect it from the light. The plate and slide are introduced through the top of the camera into the field of the object glass; when the slide is removed, and the rays of light from the object fall directly on the plate, thus acting upon the iodide or nitrate solution on its surface. From the countenance, white portions of the dress, and all light colored substances there is a strong light reflected through the tube on the plate; while from the pupils of the eyes, the hair, and all dark colored objects little light is reflected upon the plate.

When this action has continued sufficiently long for the proper impression to be made on the plate by the light the plate is removed into a dark room. In the early art the plate was next held over mercury evaporated by a spirit lamp; when the vapor of mercury so acted on the parts which had been most exposed to the light, as in the language of the art, to "bring out" the picture. To remove then the iodine still in combination with the silver of the less exposed portions of the plate, and thus in the language of the art, "to fix the picture" the plate was immersed in a solution of the hyposulphite of soda dissolved in distilled water.

Sect. 3. The Ambrotype; and Printing of Multiplied Engravings by Photography.

Photographs taken originally on metallic plates received the name of Daguerreotypes from Daguerre; though he himself first gave to the art the name of Niepce. Photographing on paper saturated with a solution of some salt of silver, especially the nitrate, was as we have observed, attempted by Davy in 1800. In England, paper instead of metal became the favorite ground; and photographs on paper were named Talbotypes, from Fox Talbot, who had done most to perfect this branch of the art. The paper was prepared by immersion first in salt water, or chloride of sodium, drying and immersing again in a solution of nitrate of silver. Talbot first used gallic acid, made of gall or oak apples, in the nitrate solution to heighten the sensitiveness of the paper. The paper thus prepared received the picture in the camera as the plate receives it, and was a negative or reverse. To obtain the positive the negative was laid upon a second paper prepared as the first; a board was placed behind the second and a glass before the first; and the whole, being then carefully

pressed into contact, was exposed for some hours to the sunlight with the glass uppermost. The impression was received through the glass and the first paper upon the second; the rapidity of the process depending upon the thinness, or translucence, of the paper through which the light must pass, and its evenness on the purity of the paper.

The difficulty of obtaining paper free from impurities, and the slow action of the light through paper, led to the invention of the Vitrotype or Ambrotype; the former name being derived from the Latin, the latter from the Greek words for glass; which material Sir John Herschel first employed in 1840. Different and constantly improving methods of preparing the glass plate have been employed by practical photographers. At the U. S. Coast Survey Bureau, the following is among the most approved. Dissolve ordinary cotton fibre in an equal mixture of sulphuric and nitric acids, forming *collodion*. Dissolve iodide of ammonia and bromide of potassa in water; take equal parts of alcohol and of ether; and with these two mixtures combine the collodion. In a room to which only yellow light is admitted, either gas or oil light or that of the sun coming through a yellow curtain, pour the before-mentioned liquid compound over the glass for the ambrotype; or spread it by rolling a small glass cylinder wet with it over the entire surface of the glass. When by the rapid evaporation of the ether the plate is dry, immerse it in a bath of nitrate of silver, which will soon form with the collodion a white film over the surface. After being placed in the camera, and removed to the darkened room, fix the picture by immersion in a mixture of acetic or pyrogallic acid, having in solution protosulphate of iron. After rinsing in water immerse the plate in a bath of hyposulphite of soda, to destroy any remaining nitrate of silver; and, if haste is required, add to the soda-bath the cyanide of potassium. Finally wash thoroughly to destroy the hyposulphite of soda.

The picture thus brought out and fixed is now used as a negative for obtaining positive pictures; the printing process being the same as that already described. In its early first use, however, the ambrotype was framed as a daguerreotype; having the double advantage of allowing the picture to be seen at any angle, and also of being reversed so to become a positive, the picture being seen through the glass, and viewed on its back side. The paper on which the ambrotype is to be laid for the purpose of printing photographs by the sunlight is thus prepared. Immerse the paper in salt water, or solution of chloride of sodium; or coat it with albumen, the white of an

egg, in which rock-salt has been dissolved. Dip it when dry in the bath of nitrate of silver. After the impression has been taken from the ambrotype, fix or "tone" the picture by immersion in a bath of hyposulphite of soda having chloride of silver and gold in solution to "gild" the picture. Finally soak the picture not less than twelve hours in running water to remove the hyposulphite of soda.

Sect. 4. The Chemical Action which takes place in Photographing.

The law of the chemical action which takes place in photographing, especially the mode in which the sunlight acts on the metallic salts to produce the light and shade of the picture, has been a difficult matter for decision among chemists. The principles involved seem to be these. When the silvered plate of the original daguerreotype was held over the vapor of iodine, the iodine combined with the silver, coating the plate with iodide of silver. In the sun's rays, as chemistry now teaches, there are three classes of physical agencies; those of light, heat, and electricity or chemical affinity; the latter of which tends to strengthen some and weaken other chemical affinities. When for instance chlorine is mixed with water, its affinity for hydrogen, while kept in the dark, is not sufficient to decompose the water; but on exposure to the light, the affinity of the oxygen for the hydrogen of the water is so weakened that the chlorine decomposes the water, unites with its hydrogen, and sets free the oxygen. So when the photographic plate is exposed to the light, the affinity of the iodine for the silver is so weakened on the parts specially exposed to the light that the silver is more ready to unite in amalgam with mercury. When, therefore, the plate is taken from the camera, and held over the vapor of mercury, the affinity of the mercury for the silver overpowers the affinity of the iodine for the silver just in proportion to the amount of light that has fallen on the different parts of the picture; and an amalgam of mercury and silver more perfect on the light, and less perfect on the dark parts, is formed. The iodine, whose presence makes the silver sensitive to the action of light, is thus expelled in vapor where the amalgam is complete; and the remainder is taken up when immersed in the hyposulphite of soda.

Where the amalgam of the mercury and silver is complete, the surface of the plate is covered with an unbroken metallic coating; thus presenting a smooth polished surface from which the light falling on the picture is reflected, and by which the light parts of the picture are formed. On the parts of the plate where the light has

not fallen, so that the mercury has not acted upon the iodide of silver and combined with its silver, the removal of the iodine by the hyposulphite of soda leaves the silver coating broken into minute particles; whose surface reflecting no ray of light, forms the dark background of the picture. The intermediate shades are produced on the parts of the picture where the light is of medium intensity in taking the impression; and where consequently the amalgam on the plate is but partial.

The chemical action in the case of the ambrotype, and in photographs on paper, appears to be this. When the light has acted on the plate or paper, the affinity of the silver for the nitric acid is so weakened that it can unite with the vegetable fibre of the cotton, or the animal albumen of the egg; for both of which the acid has also a strong affinity. The silver set free forms a thin film on the glass; which, becoming a reflecting, and therefore light surface, gives the light parts of the picture where the surface of the object was lightest and therefore more reflecting. When employed in printing, this film of silver cuts off the action of the sunlight from the parts of the ambrotype that were made light by this same film; leaving the other parts to be darkened and thus shaded by the action of the light. The action of the protosulphate of iron, prior to the immersion of the plate in the hyposulphite of soda, seems to be, to take the oxygen from the nitrate of silver, prepared beforehand as it is by the sunlight to be easily decomposed.

Sect. 5. The claim of Photography as a Fine Art.

Photography considered as comprising all methods of producing images of objects by the action of reflected light, is a branch of art-industry which may be practiced merely as a trade; and yet it may rise to the highest dignity as an art. To do justice to his work, the operator must possess the culture of an artist, both in Taste, and in Study of the Laws of the Beautiful. He should also be a careful student of nature, as well as conversant with the best works of art in painting; in order that he may select, in taking portraits, such attitudes and accompanying emblems, implements or surroundings, as will be in consistency with the station and occupation of the parties, and in harmony with their character and culture. At the same time he should possess an educated and refined taste, so as skilfully to select the direction and degree of light suited to the complexion of skin, color of eyes, and style of dress in his sitters. The mere mechanical application to the plate, or glass, of the proper chemicals,

the putting of that unmeaning or perverted emblem, a book, into every man's hand, no matter what his occupation, and the counting of seconds of time required for the due action of the light, while the sitter is screwed stiffly upon a chair, gives the manager no title to be ranked as an artist; and yet the highest genius and amplest culture in art may find a field for exhaustive employ in the photographer's gallery.

The application of Photography to the copying of natural scenery, either in single or stereoscopic views, demands for its successful execution the same artistic skill. Here, of course, there is not as in the taking of portraits the direct arranging of attitudes and of light; yet there is the same demand for skilful selection of place and of time. The artist has the power of unlimited choice as to the point from which, and the season or hour at which, he will take his view; and these two studies will be decisive as to his success.

In addition to the two already mentioned claims of Photography to take a dignified rank among the Fine Arts, that busy agent in portraying everything visible, the artistic pencil of the sunlight, has yet a third and a wider range in the creation of works of utility and of beauty. Recent discoveries in sensitive chemicals and combinations of light have caused Photography to become a cheap and most perfect substitute for engraving. Like the Genii with talismanic wand, it claims to be gifted with power to reproduce the finest originals in the galleries of Painting, and to multiply them in such numbers, that every student and lover of art can have all the best masters on the walls of his studio. The influence thus exerted on the culture of both artist and people, must be great. A culturing effect may already be seen from photographic views of the choice relics of ancient statuary, of the paintings of masters like Raphael, as well as of gems of modern art. More than all cartoons by the most eminent artists, rough charcoal sketches drawn of colossal or life-size proportions, admitting, of course, of great accuracy in the detail of the drawing, have been reduced by the photographing camera. When thus copied in miniature, the bold and rough outline assumes a delicacy and nicety of finish which no skill of the engraver can approach. In this latter field Photography may become the Art of Arts.

CHAPTER V.

DESIGN IN DRAWING.

When a mechanic merely copies a model of a chair, or any other article of utility, he has nothing to do with designing; he has only to execute a design previously prepared. So, when in drawing, the pupil merely copies the pattern given by his master, or when in advanced studies he draws from casts and even from nature, he is but executing a design already prepared; he is not at all the originator of a model, much less of an idea.

When, in the useful arts, any piece of mechanism, as a watch, is to be constructed to accomplish a special purpose, as that of keeping time, then design is demanded. So, when in the Fine Arts, any new work adapted to a special end is required, the artist has to design before he can execute the desired work. The act of designing as a study naturally includes three parts; first, the conceiving of the general work by which the end is to be attained; second, the inventing of the parts of the work which is to accomplish that end; and third, the combining of those parts so that as a whole they shall secure that end.

Drawing is the first of the Arts of Design, and that for a double reason; it is the first of the arts addressing the eye which the child or savage learns; and it is also the foundation of all the other arts of the same class, since the sculptor, the architect, the painter must always begin his work with drawings. As a striking illustration of the fact here referred to, and of its appreciation by great artists, we find still preserved in the Uffizi Gallery, at Florence, over 20,000 drawings of the ablest Italian sculptors, painters, and architects, such as Raphael and Michael Angelo. The German galleries are filled with similar collections from the pencils of Albert Durer, Rembrandt and others.

Lionardo da Vinci and other eminent writers on art have brought the subject of design, including as it does Conception, Invention, Composition and Expression, under the department of drawing; and that not only because Drawing is the foundation of the other arts, but also because in Sculpture and Architecture, Composition is but subordinate. The subject of design therefore must be considered under Drawing or Painting. The former is preferable since design

in some or all of its parts holds an important place in all the arts mentioned.

Sect. 1. Conception, or the Originating of the Idea to be embodied in Drawing.

As Conception is the originating stage in the process which gives form to objects endowed with natural life, so it is in the process by which the artist gives to "airy nothings" in his imagination a "local habitation and a name." The Greeks called the first conception of the artist *hypothesis;* the word used by Greek rhetoricians to express the statement of the proposition in an argument, or that which a speaker or writer proposes to discuss. It is used by Plato in his "Laws" to indicate the design or purpose which governs a man in any act or employ. Pliny says that Nicias the painter excelled in this originating power: and he declares that a good design, *hypothesis,* is as important to the painter as is a well conceived theme, *mythos,* to the poet. The same Greeks called the complete conception formed by this act of the mind *eideia,* or idea; the word so familiar among the disciples of Plato.

The *design,* of course, will depend for its special character on the particular object sought in the work of sculpture, painting or architecture, for which the drawing is the first study. The subjects for works of art, as will be more fully considered under Sculpture, may be referred mainly to three classes; first, those designed as private decorations; second, as civic monuments; and third as religious symbols. In either of these classes of subjects the artist must first study his design until it takes shape in a *conception,* which he can begin to put into a drawing with his pencil. This conception may embrace one or more figures; it may have either a single object united to a single figure, as a statue with its pedestal, or it may combine all the varied objects in an extended landscape. In either case, it should be remembered, it is not the direct copying of any form or forms already existing in nature or embodied by another artist that constitutes design; but it is the originating of new forms, as truly unlike though similar to others in existence, as every new-born child is unlike though similar to thousands of children already born.

It is in the department of drawing that the study of design is especially to be pursued. Fuseli devotes his Seventh Lecture to this subject; in which he shows that the field for the study and practice of design is drawing, or the executing of forms in mere outline. In his Eighth Lecture, which is upon Color, he quotes the statement of

Sir Joshua Reynolds; who, though one of the greatest masters in coloring, declared that this department of art in which he excelled was but secondary and subordinate to that of design in drawing the forms afterwards to be colored; and he expresses regret that his own education in this fundamental art had been pursued under such great disadvantages.

Sect. 2. Invention, or the Elaborating of Conceptions.

Passive differs from active imagination; some men having the power of forming conceptions both poetical and artistic, which they lack skill to put into form. The second work in design is invention, or the power of working up the details of a fine conception. Artists skilled in the practice, as well as in the theory, of their profession have given a large place in their written treatises to the discussion of this subject.

Lionardo da Vinci thus describes the process of inventing a single figure which shall be an ideal of perfection in form. "The artist should form his style upon the best proportioned model in nature. After having taken its measure, he should take that of his own person; so as to avoid the influence of self-love in copying his own defects. He should aim at universal excellence; for one excellence in a painting only makes more manifest attendant defects." Proceeding to consider the subsidiaries of the figures, he dwells on the necessity of studying long and carefully different attitudes, and their effects on the position of different portions of the figure; the manner in which folds of garments will hang in different attitudes; the particular shape which the muscles will assume from the position of each limb; especially the contour of each part of the entire figure when the muscles are strained under any nervous excitement.

Fuseli in treating of Invention suggests that its true spirit allows the borrowing of ideas from great artists of former ages. As a Milton may borrow conceptions, not their embodiment, from Virgil or Homer, and as an inventor in the useful arts may borrow principles from a man of science, so may a truly original artist gather ideas from former great masters, and incorporate them into his own independent works. Each great master in art has his own peculiar style; as distinct from that of other leading minds, as one poet's style is distinct from another; Michael Angelo being epic in his invention, Raphael dramatic, while such an artist as Poussin is historical. In each of these styles a different order of invention is of course required.

Fuseli cites Hans Holbein as remarkable for the fertility of his inventive skill.

Ruskin has many valuable suggestions belonging to the subject of Invention, in his remarks upon the attaining of Truth in drawing. The early Italian artists had their "judgment so tempered by veneration for old models" that they were "dull in their perception of truth;" and hence there was little genuine invention in their works. A "particular truth" is more important than a general truth; and variety is attained "in giving a genus by individuals." "The painter and preacher are both commentators on infinity; and the duty of each is to take for each discourse one essential truth." "Primary truths, or those which belong to essence or substance, are of greater importance than secondary truths, as those of color;" a statement which is the idea of Sir Joshua Reynolds as presented by Sir William Hamilton.

Among "special truths" to be sought Ruskin enumerates the following. "Truths in Space" were overlooked by the old masters. In a distant background there was none of the obscurity belonging to nature; you could either count all the bricks as well in a distant as in a near house, or both alike would be a blank flat. The Dutch artists were the first to attain truth in space; the Italians were the last to reach it. The true rule, Ruskin says, is this; "You shall not be able to count the bricks, nor to see a dead flat." "Truth in Clouds" was yet later in being secured. The old masters separated clouds from the blue beyond; they should be a part of the common vault. It is the rarest attainment in art to succeed in every variety of cloud. "Truths in Earth" Ruskin thinks of modern attainment also. In the old masters the foots of mountains come from underneath the plains; and the summits are always pyramidal. Extreme distance should always be indicated by a sharp outline. Near objects in the foreground are to be worked into their real forms as seen in nature; blocks of limestone in irregular cubes, the corners rounded and the light and shade distinctly marked. "Truths in Water" Ruskin regards the most difficult of all to attain; especially the irregular effect of its reflecting surface when agitated and thus modified from extreme dark to a perfectly light shade. In all these particulars mentioned, it is only the *principle* of truth, not any real appearance, that can be copied; for appearances, especially in cloud and water, are so perpetually shifting, that no copy can possibly be made.

Ruskin regards the success of the great Italian painters to have been greater in drawing figures in the foreground than in the back-

ground. In Raphael's drawings the dark and heavy lines are towards the light; a fine specimen of which is the "Angel pursuing Heliodorus" in the Gallery of the Louvre, in which the dark and strong lines terminating the nose and forehead towards the light are opposed to the tender and faint lines behind the ear in the shade. Salvator Rosa, he thinks, "had great perception of the sweep of foliage and of the rolling of cloud;" but he "never drew a single leaflet or wreath of mist" aright. Here again it is inventive skill alone that can guide the pencil to those touches which shall give a true picture of nature; for these are not features that can be copied, they must be originated.

Sect. 3. Composition, or the Grouping of Details when Invented.

Invention proper is at the end of its mission when it has wrought into form the parts of a figure or groups of figures and objects to be embodied in a work of art. When the parts are thus wrought out, it is still, as in the useful arts, a great labor to adjust the parts to each other. The ancient Grecian painters, as Pliny states, differed as to their success in Composition, called by him "*Dispositio*," or disposition. He relates, that Apelles excelled in this power; mentioning several specimens of his successful *disposition* of the parts of his pieces; among others a painting of "Diana mingling with a troop of virgins offering sacrifices," the grouping of which is so admirable that "he seems to have surpassed the verses of Homer describing the same scene." Pliny also gives illustrations of the skill of the painter Nicias; who said "that it was not a small matter in his art to take a whole forest and picture it; to delineate contests of horses and ships; to group horses in many positions, some running, some standing in battle array, and some kneeling for their riders; to represent the riders of some horses as hurling javelins, and of others as falling from their backs." This early attention to the composition of great pieces shows how inseparable from success in drawing is this portion of the artist's study.

Lionardo da Vinci having dwelt upon Invention as it relates to the elaborating of single figures, passes to consider Composition as the grouping of the parts already invented. In a storm, for instance, many objects and figures are to be brought together; a wide field of view is to be compressed upon the canvass; and in the outline sketch of the artist, sky and earth, light and shade, are to blend in the same harmony as in nature. Still more, if the scene depicted be a historical event, as a battle, in addition to the work just mentioned, the

artist must study the facts he is to represent with a care and comprehensiveness like that of the great dramatist or writer of romance; while at the same time he has not a whole volume at command, over whose ample leaves he may expand his conceptions, but only a single page upon which his entire comprehensive picture must be compressed. Still more, in an audience addressed by a popular orator, each face amid the whole sea of upturned heads must be characterized by its own peculiar natural features, while each mind seems swayed by the emotions peculiar to its possessor. In such delineations, since the study of each countenance is to be a master-work, and the grouping of all to be such as to produce one harmonious effect on the beholder, and that the one desired by the artist, the severest possible test of the skill of the composer is called into exercise.

The same artist gives the following particular instructions indicating the constant and life-long study by which alone an artist can become eminent in Composition. "In proceeding to Composition, the pupil should study every variety of form and of motion; making sketches of single figures from various different points of view. Then he may combine figures in different attitudes; as two men walking, wrestling, etc. If a historical picture, which he is studying, is to be elevated for subsequent view, the artist must place himself in the same relative position while composing. In countenances and figures he should never repeat, but always present an entirely new and original specimen. For this purpose the young artist should watch men as he sees them under the influence of varied passions; and in his note-book he should copy their expressions of countenance, their positions and gesticulations, so that when composing he may have an inexhaustible store of nature from which to draw. Each part of the body, in its anatomy and in its perspective, must be a separate study and labor. The folds of dress should be copied from nature, so as to represent real clothing, flowing and easy, not swelled as with wind, nor stiff and tight drawn. When the figure is foreshortened there ought to appear a greater number of folds, all drawn around in circles." "In grouping a historical subject, the chief figure should stand forward and be painted in clear strong colors. In drawing trees, contrive to have them half in shadow and half in the light; selecting a day when the sun is partially hid by clouds. Unite every variety; finished figures in the foreground and unfinished in the background; otherwise neither will be executed well." Hogarth, in his "Analysis of Beauty," makes

this strong statement as to the importance of variety in Composition: "The art of composing well is no more than the art of varying well." Fuseli, again in his Fifth Lecture on Painting, states that "Invention is followed by Composition." In the work of composing, he teaches that attention should be paid to both physical and moral elements; among the former to Perspective, Light and Shade; and among the latter, to Unity, Perspicuity, and Propriety. While much which the Italian Lionardo, and the English artists and critics quoted, urge in treating of Composition is made applicable by them to Painting, intermixed with their general statements are special rules for Composition in Drawing; while, moreover, nearly all their teachings as to excellence acquired in composing by the painter, are made to depend upon his skill in executing the previous drawing, which gives the forms that he is afterwards to color, not only in their general outlines, but still more in all their minute details.

Ruskin has stated the following as the laws of Composition. *First*, Principality; there should always be a principal figure or part in a work of art, as there is a head or prominent portion to every object or scene in nature. *Second*, Repetition: symmetry requiring that a principal figure be supported on each side by similar subordinates; as two small domes, if any, on the two sides of a central and larger one; and a right and left group to a central statue in a pediment. *Third*, Continuity; the pillars of a Cathedral, if diminishing in perspective, or if from necessity of different sizes, having a regular ratio of increase or diminution; the bank of a river, against which the current sets, being represented with a graduated increase of steepness. *Fourth*, Curvature; the tops of spires, trees, and even of bridges and buildings, as also the outlines of clouds being drawn not in straight, but in curved lines; in which the critic seems to have in mind the subject of "Curvilinear Perspective." *Fifth*, Radiation; as fibres in leaves and ribs in a boat. *Sixth*, Contrast; not too striking, yet real; dresses, not all of the same cut or color; the battlements of a tower, not all of one fixed measure. *Seventh*, Interchange; succession in change, as in colors of dresses, and in light and shade. *Eighth*, Consistency; as in the appropriate colors of massive and of distant objects; in the dependence of the slender and graceful, on the sturdy and rugged; by study of which principle breadth is secured. *Ninth*, Gradation; if obliged to make one tint in a landscape fainter than it is in nature, to make all correspondingly faint; a good study in which is the representing of a dark tree against the sky, painting

first the white cloud, then the blue sky, then the dark tree, and lastly putting in the intermediate tints.

Sect. 4. Expression; or the giving of reality and life to Composition.

In the useful arts, when the parts of a machine are all fitted and adjusted in one compact whole, it is the triumph of art to make the inert and passive mass become a moving agent, doing the work and accomplishing the end for which it was designed. The poet, who has elaborated in detail and woven together in composition an epic of twenty-four books, is not a Homer, unless his pictured men seem to move and speak, so as in fact to make the reader forget that they are fancied beings, and not real men, with whom he is living and acting. So all great masters in art have felt that the design, the end of their conception, invention and composition, is not reached unless such a power of expression, the attribute of apparent life and motion, has been infused into the forms they have executed, that the beholder can hardly imagine as he gazes, that it is not a scene of actual existence upon which his eye rests.

Socrates, as Xenophon relates, went one day into a studio of a sculptor who had admirably succeeded in representing every variety of human posture in marble, those of the racer, boxer, wrestler, etc., and asked, "Is it not necessary in order to give pleasure to the beholder, to imitate the *emotions* of the men performing any particular act?" Lionardo da Vinci makes this part of the subject of design relate to inanimate, as well as animate beings; adding the term "Character" to that of "Expression," in order to make clear the extent and force of his meaning. The artist, he urges, "should *express* motion in the forms he draws; old men and youth must appear to be real; those laughing and weeping should so speak as to call forth the sympathetic emotion in the beholder." More than this, Character is to be given even to objects without life, such as shall be like Expression in human beings. "Shadows must be made to seem actual; more time even being spent upon them than upon the figures themselves. Clouds should be so detached from the background as to seem suspended in the air." He gives lengthy directions for the study of features expressing particular emotions; mentioning that "in laughing, the brows are open and the corners of the mouth turned up; in weeping, the brows are contracted and the corners of the mouth turned down;" that "men weep from anger or fear, joy or sorrow, suspicion or compassion, enmity or tenderness;" and that "each mental impression has its outward expression in the form of

the features." Yet more, "there is a position of each part of the body, as well as a form of the features, characterizing different emotions and each shade of emotion;" many of which the writer describes. These frequent and particular directions of this great artist, demands so far beyond even the hope of attainment by ordinary artists, would seem overstated had not men, like the writer himself, spent a life-time of ceaseless daily and nightly toil, with sketch-book and pencil in hand; Lionardo to the very last days of his life seeking to perfect himself in drawing as the fundamental art upon which the higher arts depended for success.

Many other writers might be cited. The following from Fuseli, when treating of Expression, is a fitting close of this brief analysis of the subject of Design in Drawing. "Expression," says Fuseli, "gives vividness to an image, and *interprets* Composition." It is, indeed, as its very name indicates, that aspect of perfect reality which makes the work of art, as it were, *vocal to the eye;* even as, in the counterpart address to the organs of hearing, a well modulated voice reciting a poem gives an expression to the poet's composition which makes his images *visible to the ear.*

BOOK III.

SCULPTURE; THE EXECUTING OF FORMS IN ALL THEIR DIMENSIONS.

Drawing presents figures in two dimensions on the surface of a plane; only *representing* the third dimension by shading. Moulding or Sculpture actually *executes* forms in three dimensions; rounding out the figure so as to present an image in its solid proportions. Drawing must precede Sculpture; since the sculptor cannot successfully begin to model any ideal which he would put into form, till he has first conceived the outline as it would appear to the eye of the beholder from every point of view, and has elaborated each with the pencil. A brief notice of the modes of executing sculpture will illustrate the nature of its works; the history of ancient sculpture, particularly in Egypt and Greece, will show the influence of science and philosophy on this branch of plastic art; while a brief glance at the sculpture of Modern Europe will enable the student to trace the laws of its progress towards perfection.

CHAPTER I.

GENERAL PRINCIPLES RELATING TO THE EXECUTION AND CLASSIFICATION OF WORKS OF SCULPTURE.

In Drawing, *lines* are the elements of the art; in Sculpture, *surfaces*. As, however, surfaces are made up of lines, the ability to execute truly the lines of any curvature must precede the power to mould surfaces into any contour. The principles of Drawing must therefore be kept before the mind in the study of the art of Sculpture; while new and distinct applications of those principles, new ends to

be atttained, and distinct methods of accomplishing those ends, are also to be regarded.

Sect. 1. Technical Terms expressive of Different Methods of Executing and of Classifying works of Sculpture.

After the Greeks the whole class of arts generally designated under the term Sculpture, have been called the *plastic arts;* from the Greek word *plasso* or *platto*, whence our word *plat* or *plait*, and also *plaster*. The terms employed to designate the different processes, methods or styles of plastic art have each its specific meaning; some of these methods being compelled by the character of the material employed; others being suggested by some principle of design in the artist's mind.

To the first class, those compelled by the character of the material employed, belong the following terms. *Moulding* is the pressing out with the fingers of forms in soft pliable material, as clay; and it designates either the finished work of the house plasterer, or the first process, usually called modelling, of the sculptor. Akin to this is *wrought* or "beaten" work; which is the shaping by the hammer of hard but malleable material, as the metals, into forms more or less finished, being the exclusive work of the ordinary smith, and one method of executing the most finished sculpture in metal. *Casting* is the forming of images from material in a liquid state; as from plaster mixed with water, or from melted metal, poured into a mould previously prepared and then left to harden by drying or cooling; and it is either the second process of the sculptor in making his plaster cast from his clay model after which his marble statue is subsequently to be cut, or it is the final process of the common brass and iron founder, as well as of the ablest artists executing sculpture in copper or bronze. *Carving* is not the constructing of whole forms, but the cutting and rounding out of half forms projecting from the rough surface of material, like wood and stone, hard and friable as opposed to malleable. *Graving*, is the slighter cutting, of indented figures as opposed to projecting forms, in material with a polished instead of a rough surface, and either of malleable or friable texture, as copper or marble. The word sculpture, from the Greek *glypho* to carve *finely*, a word preserved in the terms triglyphs, hieroglyphs, etc., a designation opposed to *glapho* to carve *coarsely*, is properly applied only to the finer works of art in marble; and is never applicable, like the other terms mentioned, to the unartistic works of the

useful arts. The term Sculpture therefore is the most appropriate designation of this second department of the Fine Arts.

Finished works in sculpture, whose forms are determined rather by the idea of the artist than by the character of material, are classified according to the prominence and completeness of the forms which they represent; and are designated by a class of words chiefly derived from the Italian applicable to his work when completed. *Intaglio*, or figure cut in, *i. e.* without relief, properly called graving, is the cutting of a figure into the surface of stone without any rounding out of the figure; as exemplified in the hieroglyphics of Egypt. *Basso-relievo*, called bas-relief in the French, or low-relief, is the rounding up of slightly raised figures; as seen in coins, medals, etc., stamped on metal; and as shown also in cameos, in which the figure, slightly projecting, is cut in the outer or light-colored surface of the shell, while the background is formed by the inner or dark part. *Alto-relievo*, or high relief, is the carving of a figure upon stone or other substance, so that it projects about one-half the diameter of the face of the natural object; as illustrated in the embossed work of iron ornaments on stoves and of clay on ornamented pitchers and vases; and as seen in its truest style of art in medallion heads. Perfect or *complete relief* is the presenting of the entire half of the form of an object as seen by the eye on one side only; illustrated in pilasters or half columns projecting from a wall, and in the carved work made to adorn the cornice or eaves of public edifices since the days of the perfection of the art of sculpture in Greece. Finally the *complete statue*, or sculpture proper, is the carving of the entire figure with its projection complete on all sides; as in columns, or statuary standing as a central ornament, to be viewed on all sides.

The choice both of the mode of working the material and of the style of forming an image have depended partly upon the character of the material employed, partly upon the taste and culture of a people, and in part too upon the fancy of the artist. Thus wood and stone must be carved; but metal may be either cast, carved, or beaten; a fact strikingly illustrated in the primitive art of the Hebrews.[1] Again the rude Indian's sculpture is chiefly carving in wood and bone, and the African's in ebony and ivory; while the Chinese carve in stone, cast in metal, and mould in plaster. The choice of beaten or wrought work must probably be set down as an

[1] See Isaiah xl. 19; xli. 7; and xliv. 12, 13; in which the varying caprice of the sculptor, deciding about his mode of working, is admirably pictured.

instance of a peculiar fancy or taste in the artist. In the workmanship of the Hebrew artists, who of course had an Egyptian education, we observe that though they could cast in metal an idol god, yet the celestial forms of the cherubs standing on the mercy-seat of the ark, and the sacred candlestick with its branches, knops, and other ornamental work, was all of "beaten gold;" while in a later age the immense cherubim cut into statues of olive wood and carved in relief upon the walls were only "*overlaid* with gold" beaten into leaves, so that the carving should thus seem to be in gold.[1] Specimens of this same style of work are found in ancient and modern statues wrought with the hammer.

Again the choice of style in form, whether in relief or in statue, has depended in part upon location and design; partly on the cost of the work, but partly also on the taste of the age. Thus the carving on the walls of the Egyptian and Hebrew temples must be in relief, while the images standing in front could only be complete statues. Again, though the rich may have statues for funereal monuments, and the less wealthy may have a relief upon a marble shaft, the poor can have only a simple engraving on slate. Yet again, while Egyptian taste allowed the entire temple to be covered with carving in relief, and the Greeks admired sculpture in the frieze, modern taste excludes such architectural ornaments, and the chosen works in sculpture in our day, are statues in marble and bronze.

Sect. 2. The material of Sculpture.

As was natural, the earliest and rudest sculpture has been executed in material most convenient to obtain and easy to work. Wood, as the substance most abundant and readily cut, was universally first chosen; the boy's penknife and the savage's flint, easily and skilfully shaping it, while the lids of Egyptian sarcophagi, the early statues of Greek artists, and especially the elaborate oak carvings of modern times have proved it even a noble material. Shell, ivory, and kindred substances, harder than wood follow; the rudest tribes of Africa and the Islanders of the Pacific, exhibiting true genius in this species of carving, while the master-work of Phidias gave it a dignity never reached either before or since. The very hardest substance, flint, has been shaped by the American Indian into his hatchet, and by the Chinese, into miniature groups, having the

[1] See Exodus xxv. 18, 36 and 37; xxxii. 4; also Numbers viii. 4, compare 1 Kings vi. 21—32.

figures in a light vein and the background in a dark stratum. The ancient Egyptians, probably because their own river banks furnished this material, and their own bold ideas demanded this coarse stone, carved their statues and cut their obelisks in granite; while the Greeks found in the fine grained marble, native to their hills, a material fit to set forth their refined ideals.

Another class of material as widely employed belonged to the department of moulding; consisting of clay or kindred substances in a soft and plastic form. Two classes of objects were sought by such mouldings; forms designed to be hardened either by a drying, baking, or fusing heat, so as themselves to be works of art; and those intended to be used as patterns for a chiseler in stone, or as models for the caster in metal. The rudest of this class was common clay; in all ages the material for ordinary pottery and for the first model of the sculptor or caster. In the tombs of Egypt, Chaldea, Greece, and Italy, and even among the Aztec remains of Southern and Central America, utensils, coffins, etc., of the nicest baked clay, called by the Italian name *terracotta*, are exhumed; while the famed Etruscan vases, the admiration of ancient and of modern times, were of the same simple material. Yet, again, the finest statuettes formed of mere clay, coated with a substance which by intense heat is vitrified or turned to glass, studied with care by modern artists, have come under the name of Parian to rival the ancient Chinese Porcelain. The ancient Egyptians, moreover, understood the nature of a composition formed with lime, which, when laid on the walls of rock-hewn tombs, and even on the surface of sandstone columns, hardened to the consistency of marble, and received the nicest touches of the chisel. Some, again, of the ancient Grecian, as well as modern Italian sculptors, moulded even wax; and the model of the Perseus of Cellini in this material, still preserved, is regarded as even superior to his bronze casting of the same.

The third class of material fitted for sculpture is metal; sometimes wrought into form by blows of the hammer, but generally melted and cast in moulds of sand previously prepared from the model. The famed ancient Colossus of Rhodes, and the modern castings of Berlin and other German cities, unite the past and present in this branch of art. So prominent is this material in ancient renown, that Pliny makes his entire history of Grecian and Roman sculpture an episode in his treatise on the metal Brass. After the statement that early and rude sculpture is executed in "wood and clay," he says

that the metal brass reached its glory first in "Delian," then in "Corinthian" castings.

The purest and noblest of all material was *marble*. Pliny, after mentioning that even Phidias made his Minerva of "ivory and gold," states that Praxiteles was "happier in marble." It was only when the art began to decline that sculptors went back to the coarser material of ruder times; the last stage of which degeneracy, as Pliny records, "saw brass gilded with gold."

In each of the various classes of material thus suggested for works of sculpture, there is probably some distinctive characteristic, expressive of a correspondent idea, which in the higher development of the art, has led to its special selection for specific effects. Thus, as Jarves has intimated, perspective and details of background, plumage and foliage, are not subjects for sculpture; for no material is fitted for them. Within the field of this art, strength and mass are for stone; lightness for wood; transparency for glass; ease and freedom for stucco and clay; and tenacity combined with ductility for metals, since they change their shape but by effort.

Sect. 3. The Objects of Design; as specially adapted to the Art of Sculpture.

It seems a matter of course that no work of art proper can be even conceived, much less be executed, without a design. In drawing, the art whose aim is to furnish an outline or pattern after which the artist or artisan is to copy, it was appropriate to consider the nature of Design. Since, however, Drawing is not a Form, but only its representation, the object which that drawing represents was conceived in the mind before the drawing traced its outlines. A work of sculpture is an *object* of Design; and the consideration of Design in its relation to this art suggests appropriately the notice of Objects of Design. The "Arts of Design," technically speaking, are "Sculpture, Architecture, and Painting;" Sculpture preceding the other two of the three, because Architecture takes on as appendages the single forms which Sculpture has elaborated while Painting groups and colors them.

Sculpture, even in its rudest form, has as its main end to please the taste, to gratify the love of the beautiful. The meaning of the term *design*, when properly used, restricts it to the study of methods of appeal to the æsthetic sensibilities by forms of grace; and in sculpture this limitation is manifest. The work of the architect must be founded primarily on the idea of utility; but the labor of

the sculptor, whether expended upon a statue that can be employed for no purpose of mere utility, or upon an ornamented candelabra which has its use, is founded directly on the idea of beauty; this being the ideal which the sculptor would realize in his work and the sentiment to which he would appeal in the beholder.

The ends had in view by the sculptor are secular or religious; the field for the Creation of works of design, embracing individual or private and general or public æsthetic wants. Sculpture is intended to appeal to the love of beauty alone, or through this love to sentiments of friendship or of patriotism, to emotions of human affection or of religious veneration; and its creations are either ornaments to decorate, mementoes of affection to be cherished, monuments of national gratitude to inspire, funereal emblems to chasten, or symbols of religion to awaken devotion.

It was the idea which the artist would convey that led to the impress put upon the earliest and simplest of sculptured work, ancient coins; whose first stamp was the figure of a sheep, to whose value the amount of metal impressed with the image was adjusted; it was equally the idea of the artist which changed this utilitarian mark into the character of a historic tablet bearing "the image and superscription" of the king or emperor under whom it was coined; and it was yet more the same idea of the artist which again changed the head of a sovereign to the liberty-cap and the eagle on the Republican coinage of the New World. The same may be remarked of the utensils of peaceful pursuits, of arms for war, and of all the numberless carved and sculptured relics which make up the collections of that modern parody on the old Grecian word, "Museum."

It is in sculpture, in fact, more than in any other department that the love of design has shown itself to be a universal principle of human nature. The rudest savage, though he shows no conception of art in architecture or painting, carves his pipe and tomahawk into the image of some object of admiration or devotion, and covers it with devices of his own grotesque taste or superstitious adoration. The school-boy, who thinks of no other art, is universally a sculptor; cutting his bow or bat into a shape to please his eye, and never happier than in giving form to some bit of wood with his pocket knife. The greatest geniuses in art, like Phidias, excelling with the painter's brush and the architect's rule, have aspired to shape their purest and loftiest ideals with the chisel.

Works of sculpture, so far as design is concerned, have taken two separate forms. The simplest are separate and complete objects, cut

into shapes of grace or power. Such are jewels and other ornaments for the person, vases and other adornments for the mantel, mirrors and other articles for the toilette, staves and other instruments for the hand, pitchers and other vessels for the table, chairs and other furniture for the parlor, and even pots and pans, hammers and hatchets, and other utensils for the kitchen and work-shop. The highest creations of art in this department are funereal emblems made to adorn the tombs of private friends; civic statues and monuments to perpetuate the memory of noble men and of great events; and sacred images and symbols which even the simple rites of a pure Christianity require.

The other form which works of sculpture have assumed is that of decorations carved upon larger and permanent structures. Such are the sculptures which cover in such profusion the entire walls and columns of temples and tombs in Egypt; whose numberless devices make the beholder admire the inexhaustible invention and untiring labor of those ancient artists quite as much as he wonders at the vastness of their conceptions revealed in the massive proportions of the materials they have moved into place. Such too are the exquisite bas-reliefs on the cornices of Grecian temples; as well as the rich ornamental works upon more modern structures of architectural magnificence.

Among the objects selected by sculptors in all ages upon which to display the beauty and grandeur possible in artistic design, three may be mentioned as those which have excited the world's admiration. They are the lamps and candelabras wrought for temples of worship for the living, vases moulded to hold the ashes of the dead, and statues of real men who were heroes and of ideal men who were demigods.

Among the former are found the most elaborate and graceful combinations of forms; one of the finest specimens of which, as artists universally agree, is the seven-pronged candelabra, the candlestick of the Jewish temple. Originally moulded by an Egyptian hand it was sculptured by an artist of truly Grecian taste upon the triumphal arch of Titus reared in the Forum of Rome to commemorate his victory over Jerusalem. The work is most interesting to the Christian traveler as presenting at once one of the finest relics of Grecian sculpture, and also a permanent memorial of the ancient carved work given to the Jewish law-giver as a model on the Mount of Old Testament Revelation.

The Etruscan vase, a product of mingled Grecian and Roman

taste, is the master-piece of simple and chaste beauty, upon which admirers of art have exhausted the vocabulary of words expressive of grace. The vase seems to have been designed for three purposes; for private and domestic use, as holders of flowers; for public and civic uses, as the urn that received lots and ballots; and finally and chiefly, as receptacles for the ashes of the burnt dead. The forms of manly grace and female beauty traced in miniature upon their surface and then painted in simple black, or in dark red, have been copied and published in volumes in every country of Western Europe. Yet the general outlines of the vase itself have been most admired. Of these there are several forms, though all founded on one leading idea; one class open at top, some broad and bulging like a modern punch bowl, others of the shape of a modern silver drinking or presentation cup, and others of the dimensions and shape of a flower vase; a second class with closed tops, like urns, and of the same variety of shapes as the former class; and a third class especially devoted to funereal purposes of slender form, tapering as the female figure with a small open orifice at top. A careful observer cannot fail to notice that the lines of this latter class so admired, approach nearly to a perfect copy of those which make the human form so matchless as a work of art. There is in the lower part the same gently declining inward curve to the foot, and in the upper portion the same sharper but equally graceful slope from the shoulders to the neck, and the same rounding out again of the head at the summit. The art of design in the sculptured vase reached at once its climax because it took the Creator's most perfect work in material forms for its model. It has been hallowed indeed in the spiritual rites of the least formal Churches of a pure Christianity in the silver ewer and cups used in the permanent ordinance of the Lord's Supper.

Upon this point, Winckelmann has the following: "The forms of a beautiful body are determined by lines the centre of which is continually changing; and which, if continued, would never describe circles. They are consequently more simple, but also more complex than a circle, which, however large or small it may be, always has the same centre, and either includes others, or is included in others. This diversity was sought after by the Greeks in works of all kinds; and their discernment of its beauty led them to introduce the same system into the form of their utensils and vases, whose easy and elegant outline is drawn after the same rule, that is by a line which must be found by means

of several circles, for all these works have an elliptical figure, and herein consists their beauty. The greater unity there is in the junction of the forms, and in the flowing of one out of another, so much the greater is the beauty of the whole." It is not strange that true men of genius devoted to the applications of the pure mathematics, like Pythagoras and Newton, should be perfect enthusiasts in their admiration of the lines of beauty; for the following out of the higher applications of the Calculus to the radii of curvature of the involved curves in which the earth and moon move, as they go, first rolling in circles on their own axes, then swinging in ellipses around their common centres of gravity, and then again as companies whirling in spirals around the central sun, is as intricate and mazy a chase as was the pursuit of Hogarth after the Law of the Line of Beauty.

As the archetype is higher than the type, the original than the copy modelled after it, so the human form itself was an attempt of the sculptor's design superior to the candelabra and vase. Like those branching objects standing on an exquisitely small yet manifestly secure foot, the statue of the human figure itself is the most perfect work of the sculptor; our impression of beauty uniting in it these two elements; that lightness which belongs to grace of form, and that perfect balance which takes away all fear as to its strength and firmness of support. In this special work of design, the distinction between Asiatic and European art is palpably manifest. The Hebrew sculptor cast brazen oxen to stand underneath that gigantic vase, the brazen sea in the temple of Solomon; for the ox is the embodiment of strength: but the Greek sculptor surrounded the more elaborate vases with female figures whose graceful forms seem to hold up in pastime the bowl of the vase in their hands. The Egyptian Osiride column was the colossal frame of a Herculean warrior, holding up the crushing burden of massive blocks, all of whose weight is apparent; while the Greek column called Caryatides was the sylph-like form of a maiden flower-vender, sporting, as if it were a wreathed turban of which she was proud, the foliated and concealed burden of stone really resting upon her head. The Hebrew artist carved the cherub as an embodiment of physical perfection; but that people chosen to show the moral mission of man only half developed, seem not to have attempted to mould the seraph the type of intellectual excellence; while the Greek artist, though he began with the majestic person of Jove and the muscular frame of Hercules, soon aspired to the higher forms of spiritual superiority conceived in the Apollo and Minerva. In every department of

sculpture, more truly than in architecture and painting, the power of design has sought to show itself in an effort to master that chief study among God's perfect works, the matchless symmetry of the human form.

Sect. 4. Proportion as securing symmetry in works of Sculpture.

In drawing, proportion requires that the parts of an object represented have their respective size as compared with each other; so that the picture shall seem to be like the natural object. Sculpture is not a picture of an object, but the object itself; and its parts must not simply *seem*, but actually *be* copies of the object. This requires that every separate portion of the object be in all its dimensions of the comparative size of the object; and especially that the junctures and articulations of the parts be copied after nature's perfect models. This idea, as already noticed, the Greeks expressed by their word "symmetry," or *inter-measurement;* whose special signification the Latin word "proportion" but inadequately expressed.

In fixing laws of symmetry, the Greeks regarded the *age* of the person selected, as well as the particular member of the body chosen for comparison. In man, as in the lower animals, the proportionate *length*, already noted as the standard one of the three dimensions in organized bodies to be regarded, as well as the breadth and thickness of different members of the body, is greatly varied by age. In the young of horses, cows, and sheep, which suckle standing, the legs are disproportionately long; while in the cat, dog, and other animals suckled by the mother when lying down, the same limbs are as disproportionately short. The human infant has, comparatively, the body long and the limbs short, the head large and the feet small. The Greeks chose for a Cupid the dimensions of a child, for a Hercules, or Jupiter, the proportions of a man mature in body and in mind; but youth was the age chosen for the expression of beauty and grace. So, as will be farther noticed in its place, the proportions of a robust man were in Architecture the measure for a Doric column, those of a matron for an Ionic column, and those of a maiden for a Corinthian column.

As the "summetron," the "modulus," or standard of proportionate measurement, different members of the body were chosen. Both the head and the foot were selected as ancient standards; but the latter became the preferred measure in sculpture, as it was the only one in architecture. It is interesting to observe how the numerous standards of general measurement employed in all ages, such as a

nail, a digit, a palm, a foot, a cubit, a pace, an ell, a fathom, have their type in certain portions of the body. In its relation to art it is more important to observe that these natural measures are so universally of the same fixed proportions that they have claimed to be authoritative standards in every nation; so that no supposed improvements in science or art, and no legislation like that of the French at their Revolution, can dislodge them from their hold on the minds of the people.

Vitruvius, though writing on Architecture, gives the fullest statement extant of the proportions of the human figure as it was modelled by the Grecian statuary. He says: "Nature in the composition of the human frame has so ordained, that naturally and ordinarily there should be such a proportion, that the face, from the chin to the top of the forehead or roots of the hair, should be *one-tenth* part of the whole stature; while the same proportion is preserved in the hand measured from the bend of the wrist to the tip of the middle finger. The measure of the head from the chin to the top of the scalp is an *eighth* of the whole body; and the same, behind, is the measure from the bottom of the neck to the bottom of the scalp. From the top of the breast to the roots of the hair is a *sixth* of the body's height, and from the same point to the top of the scalp is a *fourth* of the stature. If the distance from the chin to the roots of the hair be divided into three parts, one of these terminates at the nostrils, the other at the eyebrows." "The foot is a *sixth* of the stature; the cubit, or distance from the elbow to the tip of the middle finger, and also the breadth of the chest, is a *fourth*. The height of the human frame is the same with the measure from one hand to the other." "The other members have certain affinities which were always observed by the most celebrated of the ancient painters and sculptors; and we must look for them in those productions which have excited universal admiration." He adds, showing the purpose for which he has introduced this law of symmetry, "In like manner the component parts of sacred edifices ought to be commensurate with each other, and have an appropriate relation with the whole structure."

The more particular and minute proportions of the body fixed by Greek artists were the following. The entire stature was eight heads or ten faces; and one-half the stature was above the os pubis. The breadth of the shoulders was two heads; of the loins one head and one nose; of the thighs one head and two noses. The length of the arm was three heads, one and a-half from the shoulder to the elbow,

and one and a-half from the elbow to the first knuckles. From the thigh to the knee was two heads, and the same from the knee to the ankle; and the foot was one head and one nose. The depth of the chest was one head and one-third of the nose; of the loins three and one-third noses. The breadth of the upper arm was one and a-half noses front view, and two noses side view; of the lower arm in the thickest part one and a-half noses; and of the wrist one nose. The depth of the thigh was three noses; of the calf of the leg two noses; and of the ankle one nose. In the rounding of the figure the head is egg-shaped in the front view, and circular in the side view; the nose and forehead are nearly in a straight line in the Grecian profile; the neck is nearly a cylinder; the arms and legs tapering cylinders; and the thumb extends to the first joint of the first finger. In the female figure the height is about one-tenth less than in the male; the shoulders and loins are proportionally narrower, and the thighs much broader; while the body, limbs, hands, fingers, and nails are less flattened and more perfectly round than in the male.

Sect. 5. Position as related to Balance in Sculpture.

Position, a subordinate element under place, has, as we have seen, a relation to beauty even in drawing; for even a representation of a figure not balanced gives a feeling of uneasiness to the beholder. Sculpture is itself an object, not a representation; and a statue must as truly as the man of whom it is the image, be accurately balanced in its position.

In order to secure balance, the centre of gravity must be sought by the sculptor; and all the parts be so adjusted, that the weight be duly distributed around and above the point of support. It is necessary, therefore, to study the object, not simply from one point of view, as in drawing, but from every point above, below and around; to view it not in one attitude, but in every conceivable position of its parts; and in these two classes of observation, first of its general position as a whole, then of the relative position of its parts, it is necessary to observe the point of support in each view of each attitude, and the relation of every portion of the object as lying to the right or the left of the line perpendicular to that point of rest.

In all simple and regularly formed bodies, as spheres, upright columns, cubes, etc., this is a very easy study; but it becomes a very difficult and protracted task when the sculptor is to execute an animal moving upon four feet, a man in action poised upon two feet,

and yet more a horse rearing and sustaining his rider balanced upon his hind hoofs. The difficulty increases, according to the mechanical laws of stable equilibrium, in the ratio of these three conditions; first, the narrowness of the base; second, the height of the centre of gravity above the base; and third, the projection of the parts from the line perpendicular to the centre. A beer-mug stands firmer than a coffee-cup, because its base is broader; a rope-walker stands securely with his balancing pole, because the centre of his entire weight is made lower, and the movements of the pole readily throw a larger weight when required to the one side or the other; and it is more difficult to execute the statue of a rearing horse than of a man standing, because the base of the former is so small compared with his breadth, and also, because it is easier to obtain the straight line of a man's natural and constant position than the involved curve of the unnatural and momentary position of a rearing horse.

The representations of the work of the sculptor on the monuments of Egypt, among other varied scenes of human employ to be alluded to in another chapter, show that that primitive race of artists had learned the necessity of guiding the eye and hand in cutting their granite statues by fixed measures, in order to preserve its balance as well as its proportions. Around the immense block of granite, from which a statue with a base twelve feet broad and sixty feet high was to be cut, stages of wood were erected, whose corner posts and cross boards were on all sides and at every elevation fixed points of measurement for the scores of workmen with their chisels covering the stages; and from these fixed lines and points each hewer knew how many inches he was to cut into the stone in forming the head, neck, breast, and other parts of the statue, with their varied projections and depressions.

The Greek artists at a very early day had shown great skill and ingenuity in studying the human frame in all its varied attitudes; as is witnessed by the allusions made to the teaching of Socrates by Xenophon. The scientific Vitruvius who wrote in the Augustan age of Rome, has given when speaking of the proportions of columns in architecture the method of the Grecian sculptor in studying his model; as well as the special laws of proportion in the human frame as they were fixed in the earliest times. Applying the principles of geometry they supposed the human form with the arms and limbs extended to be first enclosed in a square or in a circle and then in a cube or sphere. Standing erect with the arms extended at right angles, the height of the body from head to foot, and its breadth

from finger end to finger end being the same, they inscribed it within a square; while with the limbs extended obliquely but symmetrically they drew the human frame with the hands and feet in the circumference of a circle whose centre was the navel. Every posture of action, as in walking, running, wrestling, boxing was then mathematically studied, and the line of the centre of gravity was carefully marked; when the position of each limb and the breadth of each portion of the whole frame, first conceived to be located in a circumscribed circle or square, and then in an enclosing cube or sphere, were measured with the greatest accuracy.

At the revival of Art, near the close of the Fifteenth Century, Lionardo da Vinci wrote minute directions for the sculptor; accompanying his particular instructions with drawings presenting the male and female figure in every variety of repose and action, and showing in each where the line of gravity would fall. For the sculptor the study of balance in living forms, both animal and human, must be a constant employ.

Sect. 6. Perspective as Affected by Distance and Angular Elevation in Works of Sculpture.

The laws of proportion and symmetry are to rule the artist in executing a statue or other work of sculpture when it is to be viewed on a level with the eye and near at hand. When, however, that work is to be seen above the level of the eye, at an angle oblique to the line of vision, its proportions will be modified in the perspective. In drawing, the artist sees the object in the aspect it actually presents in the distance, or at an angle to the line of vision; and he simply copies the appearance directly presented to his eye. The sculptor has to conceive beforehand the effect which distance and elevation will produce; and keeping this before his mind as he works, he has to form an image, which, while he is near and moulding it into form looks distorted, but which when elevated to its place will present a perfect outline and just proportions.

The sculptor learns that there are two aspects of perspective which he is to regard; the dimness of outline produced by distance, and the shortening of dimensions from elevation or oblique vision. The great sculptors of Greece seem to have been masters of the scientific principles which lie at the foundation of the law of perspective; and from these principles they arrived at the converse of the law and attained the power of imagining how this distortion of the perfect

figure produced by the laws of perspective could be counteracted, so that a distorted figure should be resolved into a perfect one.

It is a principle of our nature, arrived at by experience, that the slight exaggerations of the fictitious lead us most fully to the truth. Thus the high wrought pictures of the heroic age of Greece given us by Homer present the real characteristics of the men of that day more perfectly than the tamer statements of Xenophon, or even than the graphic sketches of Thucydides; English History is more truly opened to us by the fictions of Scott than by the annals of Hume; and Dickens' slightly exaggerated pictures of cockney life in London give a clearer and truer idea of the reality than if we were accustomed to pass the very men he describes, and to view them as ordinary men met in society. So in portrait painting the artist must over-draw a little the marked features of his subject in order that friends may be assured that it is an admirable likeness. The law of our nature demanding this exaggeration of what is to be marked as characteristic probably springs from the fact that ordinarily we do not concentrate our minds sufficiently to observe the minute details in any object or scene; and it is only the salient points that strike us and really give us vivid impressions. Hence when the poet or prose writer of fiction gives us these marked characteristics *alone*, combining in a single graphic picture facts as to a man that spread over a lifetime, or features of a people developed in an age, they strike us more in their combined force than they could even were we living for years with the men described, and dwelling in the very land and age depicted. The history of a man or age cannot be so comprehended as to be written, till all the points have come out; for then only do the chief and marked features loom up and stand distinct in the distance, like the prominent features in the landscape of a country passed over, while all the intermediate and less characteristic points are lost in dimness. So too even an intimate friend is characterized in our mind by some marked feature of mind or of person; and when that characteristic feature is brought out *alone*, we recognize its truth the more from its being singly presented.

It is related of Phidias that the Athenians desired both him and his pupil Alcamenes, more admired than his master by many of the people for the extreme grace and polish of his workmanship, to prepare a statue of Minerva of colossal dimensions, and for an elevated pedestal. When completed, that of Alcamenes seemed perfect in proportion and finish; while that of Phidias appeared to distort the principal features, and to make the whole countenance rude and

even hideous. But the master had studied the science of his art; and when the two statues were elevated to their pedestals the grand and impressive beauty of the work of Phidias stood out, and every feature was softened into grace; while the polish of Alcamenes was lost in dimness, and no feature indicating life or beauty could be traced. To this same general principle is probably to be referred the remark of Pliny as to Lycippus, the eminent sculptor of the days of Alexander the Great; "He added much to statuary by making the heads smaller and the bodies more graceful and less bloated; through which the height of statues seemed greater." In many of the colossal statues made for elevated positions in later times this idea has been lost sight of; of which fact even such works as the columns of Paris, London and Baltimore, on which the colossal Napoleon, duke of York and Washington stand, give an intimation.

In correcting the impression made by foreshortening, the sculptor has a yet more difficult task. The law of perspective is that we judge of dimensions by the angle of vision which objects fill; while at the same time we correct the impression thus made almost entirely in real objects of known dimensions, and also partially correct it in images or pictures of the same objects, whose dimensions the artist may vary. Thus if we look upon the form of a friend at the summit of an elevation his height fills no larger an angle of vision than would a much shorter man seem on a level with the eye. We correct, however, almost entirely this impression; though we can hardly make the correction, when, looking from a tall spire immediately down on the heads of passing men, they seem like turtles, without stature, thrusting out their limbs from beneath their backs. This correction instinctively made in the perspective proportions of living persons is not so readily made in the statue. Yet to a considerable extent it is made even in statues; and that artist would greatly err who should suppose that all the difference of height which the mathematical law indicates is to be introduced into his work in sculpture. All that is necessary for the sculptor is to give that slight exaggeration of the height of his figure which he is obliged to give to any marked feature in a portrait or bust in order to secure the effect.

As the proneness of even a people educated in art like the Athenians to forget this law of perspective was illustrated in Phidias' statue of Minerva, so in the Athens of America when the noble bronze statue of New England's Magnus Apollo, the immortal Webster, executed by one of the most truly classic sculptors of the age, was taken from its case, and for a time exposed without its

pedestal on a level with the eye, the general Athenian cry was that the stature was too great, the form too lank, and the features distorted; and no after impression, when the statue was placed in position, could do away the power of the first impression in some minds. The artist of the bronze equestrian statues in the National Capital has shown his tact in keeping his works screened from the public eye during the process of erection; and only allowing them to be revealed when in position to be rightly viewed.

Sect. 7. Anatomy as it relates to Action and Expression in Sculpture.

The study of proportion leads to a general estimate, from the *outside* appearance, of the length and breadth of the several parts of the human figure. Anatomy, as the name implies, is the cutting up and dissecting of the human frame, that each joint with its knops and sockets, and each muscle with its attachments and the taper of its bulge may be separately considered. The study of Anatomy by the sculptor leads him to scrutinize with care the contractions and swellings of the muscles, and the pressing out of the bone joints when men are putting forth their strength in action; and also to scan the minuter workings of the muscles of the face, which give to the countenance its varied expression.

The Egyptians, as we shall see, utterly ignored the expression of muscular action in their statues; a religious superstition compelling the physician and the artist to abstain from anatomical dissections of the human frame. The Greeks, on the other hand, made great attainments in the practical knowledge of anatomy; accomplishing this, however, more by observation of the living, than by dissection of the deceased subject. For this purpose their artists employed living models; whose nude forms thrown into every variety of posture, and subjected to every kind of muscular tension, were made to serve as copies from which to model.

To what an extent this study was carried by the ancient Greeks before the days of Phidias, the following incident in the Memoirs of Socrates, given by Xenophon,[1] is an instance: "To Cleiton, the statuary, once entering his studio and reasoning with him, he said: 'That you, Cleiton, make different forms, racers, wrestlers, boxers, and experts in all kinds of gymnastics, I see and understand; but if you wished to bring out the soul of men through the form, so that it should appear a living thing, how would you work this into a statue?'

[1] See Xenophon's Memorabilia, Lib. III. Chap. 10, Sect. 6–8.

When Cleiton looking away, was slow in replying, he said: 'Would you not, now, make your work a copy from the aspects of living men?' 'Certainly so,' he said. 'Then by copying under their forms the parts drawn down and drawn up, those contracted and those expanded, those strained and those loosened, would you not make them appear more like to the true, and thus more natural?' 'Without doubt,' said he. 'Well, then, to imitate the *emotions* of those doing any particular thing, does it not give pleasure to the beholders?' 'Evidently so,' said he. 'Moreover, also,' he added, 'must not one copy the threatening eyes of those fighting, and must not the beaming countenance of those having conquered be imitated?' 'Unquestionably so,' said he. 'Then,' said Socrates, 'it is necessary to represent in the form the workings of the soul.'"

At a later period, when in the days of Roman supremacy the dissection and even the burning to ashes of dead bodies was approved as religious, Galen wrote at length on anatomy; minutely describing not only the bones and muscles of the outward frame, but the internal organs, blood-vessels, and nerves. In his extensive work he avows that his purpose in his treatise was to promote "the arts,"[1] as well as to make it subsidiary to the profession of the physician; and he also announced his purpose to write a treatise on anatomy especially for artists.

The ideas of anatomical expression entertained by the ancients are laboriously collated by Dalloway, and are commented upon with great learning by Winckelmann. The parts which show beauty in design are the head, hands, and feet. In the head, the chief beauty is in the *profile;* particularly the line of the forehead and nose. When this is a straight line, it indicates majesty in man and loveliness in woman. The ancient Grecian artists differed from moderns in deeming a low forehead indicative of intelligence and beauty. Their axiom as to this was founded on the supposed perfection of the tripartite division of the head, and of the whole form. In this measurement the nose was one third, and the forehead another; and in order to make the forehead conform to this measurement, a fillet or band, about the roots of the hair on the forehead was worn by Grecian maidens, to raise or bring down the hair to the proportion of beauty. This idea of the beauty of a "low forehead" is alluded to by Horace[2] in his description of Lycoris.

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[1] Galeni et Hippocratis Opera Anatomica, Lib. II. Sect. 1.

[2] Odes, Lib. I. carm. 33.

The *eye* was another feature studied by the Greeks for its expression. In colossal statues it was deep set and darkly shaded by the brow in order the better to be seen from afar. In Jupiter, Apollo, and Juno, the eyelids are arched high in the centre, indicative of the boldness instinctively assumed by superiority in position; in Minerva, they droop more, indicative of modesty; while in Venus the lower lid is raised, giving that languishing expression captivating to lovers. In the old masters the pupil was never marked; for this is an indication of color rather than of form, and belonged, they judged, only to painting. Winckelmann has remarked that the eye of Venus, flattened above as if turned upward, adds a fascinating roll to its appearance. Pindar[1] remarks the beauty of the thin arch of the eyebrow as depicted in Grecian statues; seen in the Niobe, and now having its living representative in the women of the Greek Isles, particularly of Scio. Another peculiarity of the Greeks was that they regarded it a beauty when the hair of the two brows met, forming a single arch; to which Theocritus alludes in his Idylls.[2] The Turks also now regard it a rare beauty in their women. The Romans on the other hand regarded it a blemish; and when it was natural, as in Augustus Cæsar, the Roman sculptor removed it as a blemish; as is seen in the busts of Augustus.

The *hair* was a portion of the head which the Greek sculptor specially studied and wrought with care. Hercules was represented with short thick hair coming down low on his forehead; and even Jupiter has a low forehead. In woman the hair was wrought into curled tresses, or deep wavy lines giving shade and softness; while no single statue of a Greek female having straight hair is found. Generally, the fillet held the side curls so that they formed an arch on the brow; the Ionic column in architecture copying this feature. Behind, the tresses were gathered and tied in a double knot in that admirable simplicity, celebrated by the Latin poets Ovid[3] and Horace; as in this verse

"Crinis erat simplex, nodum collectus in unum."

It is worthy of note that the Greek female head is in this respect a perfect model for all time. In this the distinction between nature, and custom or fashion, is strikingly seen. A flaunting head-dress on an Indian squaw, Georgian houri, Italian danseuse, or a French,

[1] Pindar Nemea, viii. 8. [2] Theocritus Idyll, viii. 72.

[3] Ovid's Metaph., Lib. VIII., v. 320. Hor. Od. II. xix. 19, III. xiv. 22.

English or American coquette, or belle, may be striking for its novelty; and with thoughtless usage of language, common parlance may style it beautiful. But Art impresses us with principles which we fail to remark in Nature; for while the flaunting head-dresses sometimes paraded in old English portraits are supremely ridiculous as soon as "the fashion" changes, the simple hair-tie of the Greek female will always be beautiful.

There is discussion in modern times whether an unshaven beard is a natural appendage to the face of man, and therefore a beauty; or, an encumbrance to the vocal organs, and especially an annoying toll-exactor upon whatever would gain entrance or exit at the two door-ways before which it stands guard, and thus a sworn foe to cleanliness; an excrescence which the refinement of a higher civilization will always remove when favored with the requisite conveniences. History seems to attest that neglect to shave the beard has prevailed only among rude tribes and classes of men as soldiers and sailors destitute of the means of removing it. The Egyptians, the most cultured of ancient nations, were a close shaven people; as the countless bas-reliefs and statues of this land, exuberant in examples, without exception show; a custom of Egyptian etiquette to which as Moses mentions, Joseph, when called to stand before Pharaoh, though a Hebrew, conformed.[1] Herodotus[2] notes that even the priests of Egypt were close shaven; perhaps another indication that they were of Japhetic, not Shemitic origin. Grecian and Roman, as well as Egyptian statues, almost universally discard the beard. Homer,[3] indeed, pictures Jupiter as bearded; but Virgil makes no mention of this feature. The sculpture of Phidias, who followed Homer, gave Jupiter a beard; both in the majestic colossal statue he made for the temple of Olympia, and in the central figure of the group standing in the tympanum of the Parthenon: but in all the finer and later works, especially in the head of Apollo and of intellectual men, the beard is omitted. That it was the general impression of their age which controlled the Grecian sculptor in this is evident from the allusions of Ovid, Horace and Juvenal[4] to the beard as a rude and unbecoming relic of their uncultured ancestral age, worn among cultivated nations only by weak and pedantic men who had no

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[1] Gen. xli. 14. [2] Herod. II. 36. [3] Homer, Iliad, I. 528.

[4] Ovid Fast. II. v. 28; Horat. L. II., Sat. 3, v. 35; Juven. Sat. 16, v. 32. See also Ovid Art. Am. I. v. 108, and Juven. Sat. 4, v. 103.

other attribute than the beard to mark them out as belonging to the class of the reflective and philosophic.

Among minor anatomical features studied by the Greeks these are worthy to be noticed. The swelling of the nostrils indicated simple energy, not necessarily a ruffled temper; the Apollo Belvidere showing this grace, while the brow is calm and dignified. The beauty of the chin is in general indicated by simple roundness of form; yet the chin of the Venus de Medici is slightly depressed. A dimple either in the cheek or chin is not a beauty in a statue. The mouth is a centre of grace or deformity; the small exquisitely curved lips of the Venus de Medici being one of its chief charms. The ear is another mark of the exquisite taste and finished workmanship of the Greek sculptor. Indeed Winckelmann has hazarded the adoption of this rule for judging of the genuine antique; that an ancient fragment can always be known if it has an ear upon it. Even the breast, knees, and other subordinate parts of the body are discussed by art critics. The foot however, and the hand, next to the head, are features that show the master in sculpture.

In the revival of art after the Middle Ages, Lionardo da Vinci wrote largely on the subject of Anatomy as it relates to action and expression; and in his work the completest collection of studies in attitude and expression is to be found. In quite modern times Bell has ably treated of expression as taught by the study of Anatomy. In this discussion he has done for art something of what Cuvier did for science; having laid the foundation of a system of Comparative Anatomy for artists, especially as it relates to muscular contractions of the visage as expressive of emotion. He thinks that no emotion but that of rage is fully expressed by the features of animals; and this is expressed, chiefly among carnivorous quadrupeds, by the corrugations of the lips and muscles around the mouth. The horse expresses the same with his ears; which in rage are turned back because his defence is in his hind feet. The horse also expresses courage to a certain extent with his eye and nostrils, as well as by his ears pricked forward. The attitudes of animals are far more expressive than their features.

Sect. 8. Æsthetic Proportion; or the Law of Analogous Proportions in Pleasing Tones and Lines, as Illustrated in Sculpture.

In treating of impressions made upon the ear and eye, we have considered the analogy existing between the length of vibrating cords whose tones striking on the ear together are in accord, and of the

proportionate lengths of lines in architectural forms which are agreeable to the eye.[1] After a notice of the ancient and modern authority on which this theory rests, allusion was made to the applications of its principles suggested by Hay in forms, and by Unger in color. The elaborate work of Hay has a practical value in the study of the art of sculpture.

In Grecian architecture, Hay finds that the three leading angles of harmony employed are the tonic, dominant and mediant. In their sculptures of the human figure however he discovers two other principles introduced; while the number of angles employed is eleven in all. The size of the angles he first assumes, as theoretically those the length of whose sines, or tangents, are harmonious or pleasing when associated. Then, with most elaborate care, he proceeds to the actual measurement of every portion of the male and female figures, calculating the angles of which these lengths are the sines. The female figure as the most perfect work of the Creator in its symmetry and beauty he imagined to have its angular proportions founded upon the right angle; which, as Pythagoras and Plato argued, is the perfect angle. The angles then which on this supposition he finds entering its composition are the following.

Scale of Angular Proportions giving Beauty to the Female Form.

Char. of Angle.	Tonics.	Dominants.	Mediants.	Angles of 7th Deg.	Angle of 2d Deg.
No. of Angle.....	8th	12th	17th	Bet. 20th and 21st	23d
Size of Angle.....	½ or 45°	⅓ or 30°	$\frac{1}{5}$ or 18°	$\frac{1}{7}$ or 12° 51′ 26″	$\frac{1}{9}$ or 10°
No. of Angle.....	15th	19th	24th	Bet. 27th and 28th	
Size of Angle.....	¼ or 22° 30′	⅙ or 15°	$\frac{1}{10}$ or 9°	$\frac{1}{14}$ or 6° 25′ 43″	
No. of Angle.....	22d	26th			
Size of Angle.....	⅛ or 11° 15′	$\frac{1}{12}$ or 7° 30′			

It will be observed that these eleven angles are successive divisions of 1 by 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, and 14; that they are all *harmonics;* that all follow each other in progressive order except the last two; and that two of these, the one-seventh and its multiple the one-fourteenth, belong to the *discordant* numbers, which, however, in

[1] B. I., ch. iv. sect. 5.

composition, or combination with the harmonics, give grandeur and inspire admiration.

The study of the proportion of the male figure leads to a new order of angles; obtained by a chromatic transposition of the scale of angular proportions corresponding to the chromatic transposition of the musical scale. Between each two successive angles, as numbered in the scale before given, two intermediate divisions are introduced. Thus between 90° or 1, and 80° or $\frac{8}{9}$, there intervene 84° 22′ 30″ or $\frac{15}{16}$, and 81° or $\frac{9}{10}$. This chromatic division is extended to the obtuse angles as well as the acute, found to be the multiples of each other in the measurement; the same division being made of angles from 180° to 90°, as is made of angles from 90° to 0.

The "First Scale," or scale of obtuse angles, commences with $(\frac{15}{16})$ or 168° 45′, and ends with the right angle or 90°. The last seven of this series of obtuse angles are $\frac{3}{5}$ or 108°; $\frac{7}{12}$ or 105°; $\frac{4}{7}$ or 102° 51′ 28″; $\frac{9}{16}$ or 101° 15′; $\frac{5}{9}$ or 100°; $\frac{8}{15}$ or 96°; $\frac{1}{2}$ or 90°. As the author had taken the last of this series, or 90° as the angle of perfect or female beauty, he determined to take the first of this series, namely, the angle of $\frac{3}{5}$ or 108° for man's proportions. The eleven angles of man's proportions are then the following: as established by direct measurement in confirmation of his theory.

Scale of Angular Proportions giving Majesty to the Male Form.

Char. of Angle.	Tonics.	Dominants.	Mediants.	Angle of 7th Deg.	Angle of 2d Deg.
No. of Angle.....	8th	12th	17th	Bet. 20th and 21st	23d
Size of Angle.....	½ or 54°	⅓ or 36°	$\frac{1}{5}$ or 21° 36′	$\frac{1}{7}$ or 15° 25′ 43″	$\frac{1}{8}$ or 12°
No. of Angle.....	15th	19th	24th	Bet. 27th and 28th	
Size of Angle.....	¼ or 27°	⅙ or 18°	$\frac{1}{10}$ or 10° 48′	$\frac{1}{14}$ or 7° 42′ 51½″	
No. of Angle.....	22d	26th			
Size of Angle.....	$\frac{1}{8}$ or 13° 30′	$\frac{1}{12}$ or 9°			

As remarked at the conclusion of our general consideration of the theory of ancient philosophers that there is a correspondent law of harmony in tones pleasing to the ear and of lines grateful to the eye, and that ancient sculptors were governed by it, the conviction of such men as Newton, in science, and of Winckelmann, in antiquarian research, is worthy of consideration. To obtain a full understanding of its application, the detail of a special volume is

necessary; that of Hay being a master work. For the ordinary student it is enough, in Art as in Science, to have learned the principles which guide men of genius in their elaborate works.

Sect. 9. Practical methods of executing Sculpture.

The sculptor's first work is the study of his design, with the aid of drawings taken for different views. The exact scale of projection in front and laterally is thus fixed in the pencil drawings. The study of the design, and the working up of the details of the varied drawings required, is a large share of the positive labor of the sculptor; while the exertion of the higher power of genius in the artist is chiefly brought out in the preliminary drawings required. To attain successful execution in this and the succeeding portion of his work, the power of a naturally gifted eye and hand may be adequate; but the artist of scientific education calls into requisition the highest principles of Mathematical Science, and the most difficult applications of Descriptive Geometry. Every portion of the rounded form, head, body, arms, hands, legs, and feet, is conceived as bounded by, and included within tangent planes; whose horizontal and vertical slopes are carefully observed and the angles of their interfacial junctions noted.

The second work is the moulding into form in a clay model of the image pictured by the drawing. For this purpose a frame-work of wood and iron, with arms reaching in the direction and to the extent of the projecting parts of the designed form, is erected on a wooden stand. This frame-work is then covered with a dark clay of easy-moulding properties, which is kneaded with the hand into the general outline; when with a small scraper of wood, and another of ivory for nicer portions, the form is completely rounded by days and even months of labor. When finished and thoroughly hardened by drying, this clay model is used as a pattern from which a mould is made for the casting of working models in plaster.

The block of marble is now to be cut down to the exact proportions of the plaster model. For this purpose an upright post of wood is fastened upon a wooden stand, the upright rising somewhat above the height of the model; sliding arms are inserted into this post at distances of one, two, or three inches from each other. These arms are graduated into inches and minute divisions of an inch. A square may be marked on the floor of the studio sufficiently large to allow perpendiculars touching the extremities of the figure in plaster to fall within its limits; and another of the same dimensions may be

traced in which the marble block is placed. If now the gauge be placed on the line of the square in which the model stands, and the sliding arms be pushed towards the model till they touch its extreme points, and then the arms be clamped so as to be stationary, the gauge may be next placed before the block of marble and the stone where the arms touch be cut away until the gauge can be brought up to the line of the square within which the marble block stands. By repeating the process, upon one side and another, first the extreme points as the tips of fingers, the nose, etc., then the more receding as the knees, the lips, etc., may be marked on the chipped block; and thus in succession every point of the entire figure, as the stone is cut down, may be brought out to its required proportions.

Lionardo da Vinci gives the following statement of the simpler method used by himself and by sculptors in his time. "To execute a figure in marble, you must first make a model of it in clay, or plaster, and when it is finished, place it in a square case, equally capable of receiving the block of marble intended to be shaped like it. Have some peg-like sticks to pass through holes made in the sides, and all round the case; push them in till every one touches the model, marking what remains of the sticks outwards with ink, and making a countermark to every stick and its hole, so that you may at pleasure replace them again. Then having taken out the model, and placed the block of marble in its stead, take so much out of it, till all the pegs go in at the same holes to the marks you had made."

We have already noticed how the Egyptian artists employed the lines of the staging built up around the lofty granite block as the fixed standard from which to lay off the distances of the several parts of their work for the common workmen, who with the chisel cut the stone. We have observed with more particularity how the Greek artist conceived the position, balance and varied proportions of the work he had designed to sculpture as lying in the cubical or spherical block from which the statue was to be cut; so that the workman who used the chisel was guided like any other mechanic by fixed lines and points marked out for him to follow. We see the same mechanical contrivances now used in the studio of the great sculptor as he directs the numerous workmen chipping at his marble. This important principle now is to be observed in the practical work of the sculptor. The genius of the artist is to be at first, indeed, exercised upon the preliminary study of the ideal he has conceived, in the giving of form to this ideal, in the drawings made with his

pencil, and in the moulding of the clay into the rounded model. The mere mechanical labor of cutting down the rough stone may be performed by the common workman; since it is purely hand-work, or manual labor. Yet, as is seen in the studio of a great artist, this work of the mere mechanic must be daily and hourly presided over by the genius that conceived the ideal; for nothing but the science that in conception wrought the image first without the stone, can make that form come out of the shapeless block. No man can be a great artist who is not a man of practical science. The common workmen of the sculptor, though he have scores of them in his employ, are literally his "hands" guided by his one mind; and the finished work, therefore, is as truly his, as is that of the painter, who must do all his work alone, putting on every single touch of the brush with his own hand.

CHAPTER II.

PRIMITIVE SCULPTURE; ILLUSTRATED IN THE EGYPTIAN.

THE history of sculpture dates back to the earliest records of the human race. Tubalcain the seventh in descent from Adam is not only an artist, but even sets up a school for sculpture; for we are told that he was "an *instructor* of every artificer in brass and iron."[1] In the earliest ages of Egypt every form of sculpture was known and executed; as is witnessed by the hieroglyphics in intaglio, by the coins and the sculptured walls in basso relievo, by the rock-hewn temple-fronts presenting forms in complete relief, and by the gigantic complete statues still seen in that land. The books of Moses are full of allusions to the various departments of this art, moulding in clay, carving on wood, graving on stone, casting in metal, and sculpturing images of men and of animals; and they describe the connected processes of the art as they may now be seen in the artists' studio and laboratory; first the conceiving and executing of the model in clay; second the forming of the mould from the model; third the casting of the rough image of molten metal; and fourth the fashioning and polishing of the unshapen casting with the graver's tool.[2] The pro-

[1] Gen. iv. 22.

[2] Exod. xxxii. 4, 24.

cesses of preparing images of gods, the more costly cast of metal and gilded or plated with gold, the cheaper of wrought metal beaten out by the hammer of the smith, and the cheapest, the poor man's "stock," carved of wood, are described by the Hebrew prophet familiar with Assyrian sculpture 800 years before Christ.[1]

Sect. 1. Different Forms of Egyptian Sculpture.

The Egyptians have left behind massive specimens of this art in its various forms. The figures used as *hieroglyphics* are cut into the obelisks of granite in deep *intaglio*. It is interesting to observe that, though these mere outline figures, thus depressed and without any rounding or shading whatever, have in themselves no merit as specimens of sculpture, yet they are in their main design and real effect highly artistic. Being designed to be seen at a great distance and from below upon the face of the lofty obelisk, the figure, necessarily small from the slenderness of the obelisk, would be lost to the beholder, however bold the relief, and however full and finished the contour, did not the deep-cut intaglio, with its sharp and clear side lines make the figure of the smallest size perfectly distinct and even beautiful in its darkness of shade.

The sculptures in *low-relief* of animated battle-scenes on land and water upon the walls of temples are cut in sand-stone, a material which allowed relief; while their position on a level with the eye renders that relief artistic. The immense surface occupied by these carvings is their great wonder; for, when the entire walls of the vast city of "hundred-gated Thebes" are seen to be covered throughout almost their whole extent with these sculptures, it makes the proud patrons of art in modern Tuscany seem ignoble, who treated as a visionary the artist that proposed to paint the entire circuit of the walls of Florence in fresco. The sculpture in the tombs is upon a hard stucco with which their walls cut in the side of the limestone mountain were coated and polished; a material mentioned by Moses[2] as employed by himself, but whose composition has not fully revealed its secret to modern analyzers. This stucco or "plaster" allowed a relief proportioned to the ease with which the material was cut.

The capitals of the columns in their temples called Osiride present a *perfect relief* in front, forming really half statues. This was a specially favorite style with the Egyptians; of which the temple of

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[1] Isa. xl. 19, 20, and xliv. 10—15. [2] Deut. xxvii. 2, 4.

Aboo Simbel in Nubia, above Syene, is a fine specimen. It was this style also which was afterwards mingled so largely with the Grecian by the Romans; as is seen in the projecting rock-hewn fronts of Petra, and in the monuments about Jerusalem. Their statues, made of the red granite called syenite and of a grayish porphyritic limestone, have a massiveness beyond conception wonderful. The single remaining one at ancient Memphis, sixty feet high in a standing posture, now lies on its face in the sand; while several similar statues are yet standing at the entrances of temples at Thebes. The vaster works are the seated statues; of which the vocal Memnon and its brother of grayish limestone, and a kindred statue of red granite now thrown down and broken, are sixty feet high in a sitting posture, and well proportioned. The latter of these colossi is calculated by Sir Gardner Wilkinson to have weighed over eleven hundred tons, and to have had in its mass six times the amount of material of the obelisks in front of the temple of Luxor at Thebes; one of which was given about A. D. 1840 to Louis Philippe of France, to be removed to Paris, and which required six months' time of the ablest engineers of France with all the appliances of modern machinery simply to lower it to the ground.

Sect. 2. The Processes of the Egyptian Sculptor.

The work of executing the immense granite colossal statues found at Thebes is illustrated by the sculptures representing every variety of human employ covering the walls of the tombs. Those back of Dayr-en-Nakl, the ancient Antinoe, give a fine example of the sculptor's methods. The stone, first quarried in the granite ledges of Syene, was set up on its lower end already squared as a base. Stages were erected for the stone-cutters about seven feet above each other quite to the summit of the block. The principal artist guided the hundreds of men employed in cutting away the hard rock to the requisite dimensions. Rough hewers, with large picks and heavy mallets began at the head and worked downwards, reducing the rock to a rough surface in the form of the statue. Passing then to the stage next below to continue their work, a second class of workmen succeeded them on the upper stage, who smoothed the rough surface with chisels instead of picks. After them, again, succeeded the scrapers and rubbers, smoothing and polishing the work; following their predecessors downward from the top.

The work being thus completed, the next great business was the removal of the finished statue to its appointed site. For this pur-

pose it was placed on a strong wooden sledge, to which it was securely fastened; and this sledge was made to slide on a wooden railway. Drag-ropes were fastened around the bottom of the statue; and thousands of men pulled at these ropes directed by a superintendent perched in the lap of the statue. Men with oil, or water, in pots, went before the sledge pouring the lubricating fluid on the rails to give an easier movement to the massive load. The minute processes of the sculptor, even in the later and more classic ages, is forgotten in the grand array of force employed in Egyptian art.

Sect. 3. The Anatomical skill displayed in Egyptian Sculpture.

In Egypt, where there were, as Herodotus[1] states, physicians for the eye, ear, teeth, and for special diseases, the study of human anatomy must have been carried to a considerable degree of perfection. The character of the anatomical knowledge displayed in the sculpture, as in the drawing of the Egyptian artists has probably been over-estimated by some, and underrated by other critics. Many Egyptian explorers have noticed the accurate proportions preserved in the features and stature of the figure; the whole stature being made seven and one-third measures of the height of the head, and the hips occupying the centre of the stature; while there is a perfect regularity and a mild sweetness everywhere seen in the features. There is, however, often apparent, a great disproportion in the length of the arms, and in the breadth of the chest, as compared with the loins. When, too, the finely rounded features and placid expression of the countenance is found to be universal and unvaried in the sphynx at Memphis and in the Memnon at Thebes, in all statues standing before pylons and in every relief on the walls of temples and tombs, the aspect of the king on his throne and of the warrior in battle, of the mourner at a funeral and of the laborer at his toil, it is manifest that the knowledge of the Egyptian physician was either not found in the artist's studio, or was not allowed in his execution.

As there was no contraction of the muscles of the face giving expression to emotion in the Egyptian statue, so there was no variation of posture in the head, such as would give any occasion for different expression. In every sculpture in relief on the walls of temples and tombs, whether it be laborers with their overseers at their toil, or armies in combat in the field, or groups of guests seated

[1] Herodot. II. 84.

at a banquet, all the figures are turned with their side to the beholder so that every head is seen in the same full and uniform profile view. In statues, also, there is no turning of the head, or bending of the neck. This profile representation does not itself, indeed, show a want of artistic skill; since, as we shall see, the best ancient and modern sculptors have resorted to the same method in bas-reliefs to avoid the difficulty and unnaturalness of foreshortening in this department of sculpture. In true art, however, there is variety, life, and expression even in profile reliefs; while in statues the earliest Greek sculptors sought ease in the carriage of the head.

The same general aspect is given to every portion of the body and limbs which is remarked in the countenances of men and women in Egyptian Sculpture. The proportionate breadth of the chest and hips of male and female figures is not observed; the only indication of sex being the long hair, or the projecting breasts of women. In general, the contraction of the loins and the taper of the chest is exaggerated. The shoulders, too, are set off from the body as if they were appendages to the frame; the very opposite of the picture given by the Christian apostle of the Grecian statue, as a "whole body, fitly joined, knit together, and compacted by that which every joint supplieth."[1]

The most striking fault in the anatomical character of Egyptian sculpture is the utter extinction of life in the figures. The erect colossal statues, all have the hands and feet straightened down like a corpse laid out for burial. The seated statues have both arms stretched out by the side of the leg as motionless as those of an old man asleep in his arm-chair. In the bas-relief sculptures this lifelessness takes its own peculiar form; the arms, bodies, and legs and feet of men engaged in every form of employ, even the most energetic, whether hurling javelins, or wielding whips, hammers, or swords, whether walking, marching, running, or leaping, *all* have throughout their entire outline and contour the same stiff, motionless, petrified attitude and aspect. There is no bending of the neck, no contraction of the muscles, and no rounding of the joints, or projecting of the joint bones from the strain of the muscles. As the Egyptian statue is always a mummy, so the Egyptian bas-reliefs of the primitive age are lifeless, like the machine-like puppets of children, only *called* men and women. The fine proportions, therefore, of the limbs, and the accurate representation of features in Asiatic and

[1] Eph. iv. 16; Col. ii. 19.

Egyptian sculpture, so often quoted, is simply the mechanical copying of one fixed model. There certainly was no study of living models among the Egyptian sculptors; as we have seen that in their drawings, destitute of perspective, there was no true study of the natural landscape among Egyptian painters.

As there is no life, no elasticity of bodily frame, so of course there is no thinking soul animating the body in Egyptian sculpture. Winckelmann has well suggested that the *aim* of the Egyptian sculptor was to impress by *magnitude*, not by expression in his figures. The same general fault is observed in their sculptures of animals; the artist being satisfied to have it said by the looker-on, "this is an ox;" while nothing in the nice bend of the neck or knee, or in the rounding of the haunches, indicates that he is straining at the yoke as he pulls the plough.

The characteristics thus enumerated hold true not simply of the early and primitive Egyptian sculpture. As we shall see, ages of genuine development and progress are to be marked in this art in the history of Egypt. This is especially to be observed in the spirited battle-scenes upon the walls of the newer portion of the Temple of Karnac at Thebes; in which the men and horses have a life and vigor if not a grace worthy of even the Grecian chisel. This improved taste however was but limited in its field, and did not materially modify old Egyptian anatomical features.

Sect. 4. The Moral Tone characterizing Egyptian Sculpture.

The apparent absence of anatomical accuracy, or rather vivacity, characterizing Egyptian sculpture, which seems so inconsistent with the knowledge Egyptian "wise men" must have possessed, is doubtless mainly attributable to a moral spirit controlling the artist and repressing his genius. As in the early Christian ages the rude images of the Redeemer on crucifixes, and crude paintings of Madonnas, became a popular standard of truth from which the artist of superior taste and culture could not depart and hope to secure the patronage of the orthodox, so in Egypt the rude conceptions and rough executions of the earlier ages became a standard of orthodoxy which later artists were compelled to copy. Synesius, a native Egyptian, a pupil of the famed Hypatia, after he became a Christian, made the following statement; "Among the Egyptians the prophets did not allow metal founders or statuaries to represent the gods for fear that they would deviate from the rule." This controlled the shaping of the statues of kings, who, as deified, were supposed to assume forms and

features like to each other, as they were kindred to a common celestial model; and this too gave shape even to the bas-reliefs of men and animals, since the people refuse to allow their old favorites to be displaced by novices, either in art, philosophy, or religion. The superstitious horror of marring the body of the dead by dissection, which, even in Greece at the time of Demosthenes, compelled the student of anatomy to hide his dissecting-room in caves of the mountains, had a still greater influence in the land where the preservation of the body at the heavy cost of Egyptian embalming was incurred.

Another feature of moral obliquity led the Egyptian sculptor into error in the spiritual as well as physical development of nature in his works. It is a principle of correct taste in art, as well as of sound reason in mental philosophy, that to represent the Deity by any of his creatures, or to add any feature of a lower creature to a being of a higher order, degrades instead of elevating our conceptions. Experience echoes the teaching of Old Testament prophets and of New Testament apostles,[1] that makers and worshippers of material images of God become "like unto their idols," when in moral and intellectual degeneracy they "change the glory of the incorruptible God into an image like to corruptible man and four-footed beasts and creeping things." The natural and necessary tendency of likening God to man, or man to brutes, is to lead the mind downwards instead of upwards. The suggestion of Agassiz is of kindred import; that to add the wings of a bird to an etherial image of man detracts from, instead of adding to, our conception of the exaltation of angels. In this latter statement there is an important truth; but this truth may be perverted so as to be an error. The *truth* is that such conceptions belong to half-formed metaphor, rather than to complete figure. We admire the *metaphors* in words: "He has a lion's courage, the strength of an ox and the wings of an eagle." The Divinely suggested model of the winged cherubim was *hidden* behind the vail; Raphael in painting Ezekiel's vision left out the wheels; and true art pictures angels as floating in the air without wings. The remark of Agassiz would be an error if it excluded from the field of art *symbolic* representation of spiritual attributes, which were sanctioned in Hebrew art. It was the fault of ancient Egyptian as of Assyrian and Indian sculptors that the line of discrimination between metaphor and figure, between symbol and actual combination of inconsistent elements, was not recognized. The enormous sphynx, with a human head thirty feet

[1] Psalm cxv. 8; Isa. xliv. 9; Rom. i. 21—26

in altitude, and a lion's body couchant 163 feet long, is a monstrosity; as are the images of divinities with a human body and a hawk's or crocodile's head. Like to these is the human head upon a bull's body and eagle's wings found among the finest of Assyrian statuary. As the violation of this principle by the Egyptian sculptor is the first in the mind of Horace in the very opening of his Ars Poetica, so to all thoughtful critics of subsequent ages it has seemed the fatal error in the art of that people who were leaders and teachers for subsequent generations.

Sect. 5. The History of Egyptian Sculpture; its rude Native originals; its ennoblement by Superior Artists from Asia; its refinement from Grecian influence; and its decline under the Roman sway.

As no country has so long and so open a record of history in art as has Egypt, so on careful inspection none presents more distinct stages of progress and decline. The observing tourist on the Nile, and even the thoughtful reader of such a compend as Sir Gardner Wilkinson has prepared, can readily trace the more prominent footprints that indicate marked features of that advancing and retrograding development; as, Wornum, Secretary of the National Gallery of London, has to a commendable extent illustrated by a chronological arrangement of the British Museum collection in the department of Egyptian Archæology.

The age of primitive native Art in Egypt dates back to a period two or three centuries prior to the era of the Hebrew patriarchs; Sir Gardner Wilkinson's carefully prepared chronology fixing the founding of Memphis at about B. C. 2320, and the building of the Pyramid of Cheops at B. C. 2123, while the visit of Abraham to Egypt occurred B. C. 1921. The monuments preserving memorials of these four centuries of rude native art are the pyramids and tombs back of Memphis, the most ancient capital of the world. As the granite sarcophagus and chamber facings in the great pyramid are without sculpture, and perfectly plain, it is inferred that the art had not then attempted carving on this hard material. The name of the king, painted in red ochre on the limestone blocks of which the pyramid was constructed show, however, that knowledge of writing then existed; while the sculptures of tombs bearing the name of this early king indicate that this art was already practised, though in a style rude and simple. The figures are in low relief, cut in outline rather than in full rounded contour; and embrace little variety of subjects.

It is like a transition to a new world to pass from these rude originals to the life-like scenes in the tombs of Beni Hassan, to the Grand Hall of Karnac and the spirited battle-scenes on the outer walls of that vast structure, and to the rich and varied devices covering the walls of the Remesium and the temple called Medinet Aboo at Thebes. Beginning with Osirtasen I. the Pharaoh of Joseph's day about B. C. 1740, continuing through the reigns of Amosis, Thothmes I, II, and III, who were on the throne from Moses' birth B. C. 1571 to the Hebrew Exodus B. C. 1491, and thence under Remeses II., the Great conqueror called by the Greeks Sesostris, who flourished about B. C. 1355, and his successors for two generations, this era, lasting five centuries, closes a century before the Conquest of Troy. In the early portion of this period shepherd kings from Asia had for a time been masters in Egypt; yet later the king and priests were a separate caste who employed foreign officers; later still a line of foreign kings, whose hieroglyphic titles Wilkinson has collected, occupied the throne; and still yet later, the conqueror Remeses brought foreign arts and artists into the land. During all this long period there is evidence that the ruling class in Egypt was of the same stock with the Persian, Grecian, and Roman, which succeeded to the same domain; and identical with the races at that very age ruling in India and Assyria. In this age, as the names of Pharaohs on them show, originated those transcendant works, in blocks of stone more massive than those of the earlier age and wrought with true artistic skill, the sphynx near Memphis, the colossal statues standing and seated at Thebes, as well as the exquisitely cut reliefs of the richest tombs between Memphis and Thebes. Though compelled evidently by the resistless limit of the popular taste to the old line of subjects and to the fixed methods of native artists, these superior masters threw a dignity as well as variety into their designs and execution which is as marked as the transition in Greece from Dædalus to Phidias.

The Greeks under Alexander came too late into Egypt to become special renovators in art; for among themselves the decline had already begun. At Ombos and the Isle of Philæ, in the extreme of Upper Egypt, however, relics of true Grecian taste, radiant as with the beams of the setting sun, still shine in the temples then reared, truly Egyptian in architecture, yet Grecian in mythological symbols and sculptural finish. Yet later, in the temples lower down the river at Esneh and Dendera, the most magnificent remains of Egyptian architecture, after the grand hall of Karnac, tower in their rare

perfection, reared by the Cæsars while lords of Egypt. The excessive profusion of their sculptured decorations, as well as the gorgeousness of their coloring, bespeak the Roman spirit; which sacrificed sculpture and painting as ornamental, and therefore subordinate arts, to architecture the more useful. Under their Roman masters, the art of Egypt died out, and under succeeding Muhammedan rulers disappeared; because, as we have had occasion to conclude, it was not so much native Egyptians as superior lords ruling among them who presided over their works.

Sect. 6. The Sculpture of Eastern Asia; the descending scale of primitive Sculpture; including that of India, China, Polynesia and Central and Southern America.

The observing traveler in Egypt is constantly struck with resemblances to modern China and India in the arts and sciences both of the ancient and the modern Egyptians. The jugglers of Cairo use Hindoo characters in writing their charms. In the old tombs, old tablets printed from a stereotyped wooden plate, the perfect counterpart of those used in ancient and modern China, are found in great abundance. The ancient Egyptians, like the Chinese, were a jealous and exclusive people, shutting out foreigners from their ports and allowing the merchant ships of the Phœnicians and Greeks to enter only the Port of Rhacotis, their Macao, a small town on the site where Alexandria was afterwards built. In art these two people were yet more alike. In tracing eastward from Egypt the links of a chain of sculptured works true to their central type, we are passing down a descending scale; going back in fact to the rude original from which the Egyptian Sculpture advanced to its perfection.

The ancient sculpture of India belongs to the Egyptian style, though ruder in conception and inferior in execution. The two chief centres of its existing remains are found in two rock-hewn temples of immense extent; one at Elephanta, a small island in the harbor of Bombay, the other at Ellora, an old town about 150 miles to the northeast of Bombay. The sculptures at Elephanta relate chiefly to idol superstitions; consisting of colossal statues of deities and bas-reliefs upon the walls and columns of the temple. One of these statues is the celebrated three-headed deity Brahma, Vishnoo and Seeva, or the Creator, Destroyer and Redeemer, united in one harmonized being; in which the heads are at least six feet in height. The rock-hewn tombs of Ellora, however, are the grand repository of ancient Hindoo sculpture; extending, as they do, a mile and

a half along a rocky hill-side. In these there seems to be a shrine for every Hindoo deity; so that the whole forms a Pantheon of their religion. Obelisks sixty feet high, colossal elephants and gigantic statues, are cut in the solid rock. The walls are covered with bas-reliefs representing every variety of scene, domestic, religious, and military. Warriors and priests, lions and tigers, figures grotesque and symbolical, and in one tomb a complete allegorical representation of the Hindoo paradise, furnish a range of subjects bringing out the varied merit of the ancient artists. The age when these sculptures were executed is not known; but in all important respects they belong to the Egyptian type.

The art of sculpture in China, in some respects quite unlike that of Egypt, is yet in its main characteristics after the same style, though of a grade below that of India. The mountains of China furnish the same granite found in Egypt; and the Chinese are as fond of this material for ornamental sculpture as were the Egyptians. Their miniature groups, cut in a dark flinty rock, having the foreground in a light vein, show much artistic skill. The soil of Egypt furnished a fine clay, and the desert adjoining a sharp quartz sand; and from these materials the Egyptians moulded, baked, and fused the finest pottery, glazed ware and glass. In two provinces of China the best clay for porcelain in the known world is found in inexhaustible beds; and China is to this day in advance of all the world in the manufacture of glazed pottery and of porcelain vases and urns. All the principal metals, gold, silver, lead, iron, quicksilver, etc., seem to abound in China, and its people have from the earliest days understood working in alloys as well as in the pure metals; their gold being all wrought, not into coin, but into jewelry. In one respect the taste of the Chinese in sculpture appears to be the opposite of that of the ancient Egyptians; the diminutive being preferred to the massive, gigantic and majestic; a feature seen in their paintings on vases, in their sculptured ornaments of stone, in the statuary of their gardens, and in the idol shrines of their deities. This, however, is only an apparent, not a real exception. In Egypt, miniature sculptured objects deposited in the tombs and carved on their walls, even after ages of plunder by later nations, are innumerable; among these sculptures the grotesque and humorous are occasionally interspersed; and were the Egyptians now an existing people, they, like the Chinese, would probably be regarded as fond of the diminutive in sculpture.

Leaving China comprehensive explorers like Humboldt have

traced a tide of emigration from the overstocked shores of Eastern Asia by different routes past the Pacific isles to the Western coast of the American continent. Relics of historic traditions, of language, of religious ideas, and especially of works of art constitute the connecting links in the chain of testimony. Humboldt makes these relics of art the most important; his words being "A small number of nations, far distant from each other, the Etruscans, the Egyptians, the people of Thibet and the Aztecs, or Mexicans, exhibit striking analogies in their buildings, their religious institutions, their divisions of time, their cycles of generation, and their mystic notions."[1] The structure of these buildings will be considered under the subject of architecture; their adornments furnish interesting specimens of sculpture. Ellis dwells on the likeness between the idol images met in the Pacific isles and those of the Burman people.[2] In the South Sea Islands beautiful carvings are executed on the blocks of coral built into the ancient pyramids. In the Hawaian group are found hieroglyphics similar to those of Egypt and Assyria, many of which are elaborately cut. In the same isles are found colossal statues of deities sixteen feet high; the forms of which are hideous, in accordance with the prevailing superstition, while the workmanship shows genuine skill in the sculptor. Among the relics of Aztec, or of earlier Tolteck sculpture in Mexico, Humboldt found many that called forth his high encomiums. Of the "carvings on the walls of the palace of Mitla," he says, "they offer striking analogy with those of the vases of lower Italy, and with others which we find spread over the surface of almost the whole of the old Continent." The pen of Stevens and the pencil of Catherwood have more carefully preserved the sculptured relics of the ancient cities whose remains furnished the analogies referred to. At Copan, Quiriga, Utatlan, and other ancient cities of Honduras these explorers have copied sketches of most richly sculptured pillars, generally quadrangular in shape, varying from fourteen to twenty-three feet in height and from three to five feet in breadth, whose faces are covered with figures of gods and warriors carved in high relief and bordered with deep and elaborately cut arabesques. They give drawings of altars carved with rows of figures seated cross-legged cut in high relief. The features of these figures have generally the round plumpness and blank inex-

[1] Humboldt "Researches concerning the institutions, monuments and ancient inhabitants of America," Vol. I.

[2] Polynesian Researches. By William Ellis, London, 1840.

pressiveness peculiar to Chinese sculpture; while however some of the warrior deities have a stern and life-like aspect. The groups, apparently of busts having death's-heads, often six feet high, ranged in lines along the bases of pyramidal structures, joined in their rear to the bodies of dogs or monkeys scarcely perceptible from below, reminded Stevens of the cynocephalæ, or sphynxes, in front of the temple of Luxor at Thebes, in Egypt. The whole chain of specimens, half round the globe westward, is the degenerate phase of that order of sculpture which has the Egyptian as its most studied type.

Sect. 7. The Sculpture of Western Asia, the ascending Scale of Primitive Sculpture; including the Arabian, Hebrew, Assyrian, and Persian.

The student of art, who in Egypt has observed the advanced phase of primitive sculpture when Greeks and Romans succeeded native artists as sculptors of Egyptian bas-reliefs, leaving that land and passing the Red Sea, finds the desert of Sinai stored with sculptured relics which form the first steps in the ascending scale of Egyptian art. Crossing the level limestone desert, after three days he is passing within the deep fissures of sandstone rock, whose perpendicular faces are naturally adapted for the sculptor's chisel. In retired valleys he sees elegantly wrought facades of tombs, with columns and entablatures cut in high-relief, whose pyramidal pediments and hieroglyphics show them to be of Egyptian origin. About three days journey from Suez, in a south-easterly direction, he passes a conical hill whose abrupt sides almost forbid ascent, and on whose top a grove of monumental slabs are grouped. Ascending by a zig-zag path these monuments are found to be of sandstone, from five to nine feet in height, from one and a-half to two feet in breadth, and from ten to fifteen inches in thickness, rounded at the top like common grave-stones, and standing in rows before a small Egyptian temple. Each of their faces is covered with sculpture in low-relief; at the top a globe with wings, below this the cartouche of a king and his likeness, and still below these several lines of hieroglyphics. Thus far the sculpture met is true Egyptian.

Passing the desert of Sinai, a journey of eight or ten days in a north-easterly direction from Suez, brings him to the rarest storehouse of the ancient Sculpture of Arabia Deserta, treasured in the rock-hewn city called "Selah" in the Hebrew, and "Petra" in the Greek and Latin; both meaning Rock City. The lofty sandstone cliffs, of a general red cast varying from orange-red and pink to the

darkest purple, are covered with sculptures whose artistic elegance of form is admirably set off by the beauty of the native colors in the rock. Though of Egyptian type, these sculptures were cut by a hand of superior skill, and designed by genius of superior refinement. The sculpture of the rock-hewn city, whose beauty has enraptured the scientific tourist of Germany, France, England and America, and whose strange location have made many regard it a city of tombs rather than of palaces, a rest for the dead rather than a mart for the living, is the first link in a chain that goes winding on through Palestine and Syria, till, circling about, it meets the artistic advancement of the Greek colonies on the west coast of Asia Minor, and fades into the highest forms of sculpture ever executed by the chisel or conceived by human genius. It is the first meeting of two waves of influence in art, one emanating from Egypt, the other from Greece.

Of Hebrew sculpture, the next link in the chain mentioned, no remains are extant; it is only from the descriptions in the Hebrew Scriptures, and from the single bas-relief on the arch of Titus at Rome of some vessels of the Jewish temple captured by Titus, that the forms and dimensions of their sculptured works can be definitely reproduced. The connection of the Hebrew people with the Egyptian, and their employ of Egyptian artists, aid the effort to reconstruct the general character of Hebrew art; which flourished chiefly in the ages of Moses and Solomon. Under Moses, the Hebrews first became a nation; all their arrangements for formal worship were divinely appointed; and the minute description of their sculptured works is preserved. They originated during the second and most advanced development of Egyptian art; and of one of the artists employed, it is said that he was gifted both "to *devise* curious work," and to *work* in gold and in the cutting and setting of stones and in the carving of every manner of cunning work. The two chief specimens of "beaten work in gold," designed and executed by these artists, were the two images called "Cherubs," and the Candlestick or Candelabra. At a later period, the processes of modeling, casting, and then moulding the statue of the Golden Calf, an Egyptian image, are described. Of the Cherubs, we are told, that they stood upon the lid of the ark, or chest, one at each end, about three feet apart, with their faces turned inward towards each other, with eyes bent downwards upon the lid, also called the mercy-seat; and that they had wings which were stretched forth on high, so as to overshadow the mercy-seat. Of the Candlestick of which the represen-

tation on the arch of Titus is doubtless a true copy, we are told it was of "pure gold, of beaten work, both its shaft and its branches, its bowls, its knops, and its flowers;" while in addition to the central shaft, there were three branches projecting from each side, giving support for seven lamps in all, the bowls of which lamps were carved after the pattern of the branches "with almonds, knops, and flowers."[1] Of these early works of Hebrew sculpture, Josephus, who must have been familiar with their forms, says, referring to the ark, "Upon its cover were two images which the Hebrews called cherubim. They are flying; but their form is not like that of any of the creatures which men have seen; though Moses said that he had seen such beings near the throne of God." Of the Candelabra, he says: "It was made with its knops and lilies, and pomegranates, and bowls; which ornaments amounted to seventy in all, in such manner, that the shaft elevated itself on high from a single base, and spread itself into as many branches as there are planets, including the sun among them. It terminated in seven heads in one row, all standing parallel to one another; and these branches carried seven lamps, each having one in imitation of the number of the planets."[2]

Under Solomon, more massive and elaborate castings and carvings were executed for the Hebrew temple, at a period six centuries subsequent to Moses. The carvers in wood and marble, as well as the founders in brass, were, as we learn, Phœnicians either by birth, or education; the city of Tyre having at this era, a little after the Trojan war, become the mistress in art, as well as of commerce on the shores of the Mediterranean. In his message sent to Hiram, king of Tyre, Solomon says, "Thou knowest there is none among us that can skill to carve wood like unto the Sidonians." Besides the ordinary carvers of wood, and hewers of stone, brought from Tyre, we read, that, as a master-artist, "Solomon sent and fetched Hiram out of Tyre. He was a widow's son of the tribe of Napthali, and his father, a man of Tyre, a worker in brass; and he was filled with wisdom and understanding, and cunning to work all works in brass."[3] It is evident since the old vessels of the tabernacle were still preserved, and the master-artist had an Egyptian training, that

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[1] Exod. xxv. 18–37; xxxii. 4, 24; xxxv. 32, 33, Cherubim is the Hebrew plural.

Josephus Antiq. B. III., Chap. 6, Sects. 5 and 7.

[3] 1 Kings, v. 6 and vii. 14. The word "wood" is Sanscrit; indicating that the commerce of Tyre had brought in the higher arts, if not the superior artists of India.

the new works in Sculpture of Solomon's day were of the same type as those of the earlier days of Moses.

The chief new works of Solomon were the following. Two colossal cherubs, each fifteen feet high, and stretching fifteen feet to the tip of their wings, carved of olive wood, and overlaid with gold, stood in the inner shrine, or "Holy of Holies," their wings touching each other in the centre, and reaching on either side to the wall. The shrine itself, which was of marble outside, was ceiled within with cedar wood, "carved with knops and flowers;" and the doors of the "Holy Place," or main temple, were of olive wood, carved with figures of palm trees, cherubim and open flowers, and overlaid with gold. The works in brass, cast in the clay ground by the river Jordan, were these. Two monumental pillars, about thirty-three feet high, and six feet in diameter, rose in front of the temple; the shaft about twenty-seven feet in height being a solid mass, while the capitals seven and a-half feet in height were decorated in the most profuse manner, with wreaths of lilies and pomegranates. A brazen "sea," or immense vase of circular form, cast in one mass, fifteen feet in diameter, with ornamental borders, rested upon the backs of twelve oxen with their heads facing outwards, and having their feet elevated on pedestals, which were decorated with cherubs, lions, oxen, and palm trees. Ten lavers, or smaller vases, six feet high, and ornamented like the other works, stood in the court before the shrine, five on one side, and five on the other.[1] Josephus, as well as Solomon, minutely describes the pedestals on which these ten lavers rested. "The bases were quadrangular," each supported by "four small quadrangular columns, one at each corner," over which the base projected as an entablature. On each face of this entablature there were "three compartments, in each of which were figures in high relief of a lion, a bull, and an eagle;" while on the corner pillars "were the same animals in low-relief." The pedestals thus constructed, rested each upon wheels so attached as to seem part of itself; their diameter being a foot and a-half, and their spokes fancifully carved, terminating in hands that clasped the felloes, while between them were palm trees; the whole work being cast of the same metal.[2]

Besides their sacred sculpture the Hebrew people from the earliest days had among them images of idol deities. Rachel the favorite wife of Jacob is represented as purloining the "images of her father,

[1] See 1 Kings, vi., vii. [2] Josephus Antiq., B. VIII. Chap. iii. Sect. 6.

Laban;' which Jacob afterwards buried under an oak at Shechem.[1] Even under Moses, similar images enclosed in a portable shrine were brought as valuables out of Egypt; a fact mentioned by a late prophet and by the first Christian martyr. Under the Judges of Israel similar images of gold and silver existed; and yet later under their kings the brazen serpent of Moses became an object of religious reverence.[2] Such a record among a people so strictly cautioned shows how prone is human nature, made to admire art, and not only allowed but enjoined to fill their temple with its purest models, to abuse instead of rightly using the best gifts of the Divine Benefactor.

Assyria, in whose city of Babylon, architecture and other arts aspired to even an irreverent grandeur, as seen in the tower which was to reach unto heaven, has been from the earliest days of authentic history a renowned leader in the art of sculpture. The patriarch Job, whose long life indicates that he was contemporary with the builders of the pyramids of Egypt, mentions as practised in his day that elaborate method of sculpture which consists in cutting a deeply grooved outline in the sides of the mountain rock, and either filling it with molten lead, or more commonly painting it with the mineral lead pigment to make the impression distinct.[3] Daniel's[4] mention of the golden statue of the Assyrian king, ninety feet high, links the Chaldean sculpture to that colossal style of which the Egyptian was the type. The recent researches of Layard have exhumed treasures of sculpture in the ancient cities on the Euphrates. At the entrances of palaces stood statues, often cut in alabaster, of colossal lions and bulls, having human heads and eagle's wings. The walls and doorways of inner apartments were profusely covered with sculptures in relief; and pavements, sometimes a mile in length, were indented with figures in intaglio, representing state pageants and battle-scenes. In the execution of these sculptures there is the Egyptian stiffness of attitude in warriors hurling javelins and arrows, and want of perspective in representing rows of figures. While, however, the Egyp-

[1] Gen. xxxi. 19, and xxxv. 4.

[2] Amos v. 25, 26, and Acts vii. 43; Judg. xvii. 5; 2 Kings xviii. 4.

[3] Job xix. 24. The term "graver of iron" is Chaldee; the word "lead" is derived from the adjective "white;" the designation "rock" means properly "mountain ledge." The structure of the Hebrew expression compels this rendering, "With a graver of iron and in lead in permanence on the mountain ledge may they be inscribed." The common custom in ancient Egypt, about Sinai, in Arabia and Syria, seems to indicate the style of art referred to.

[4] Dan. iii. 1.

tian figures had an excessive slenderness, the Assyrians gave to theirs an exaggerated plumpness of the muscles; which, were it not for their short limbs and squat stature, would make the heroes represented, rival the rugged Hercules of Dædalus. There is, moreover, in the countenances a life, and in the postures an action, entirely unlike that seen in Egyptian sculptures. Layard remarks, "The principal distinction between Assyrian and Egyptian art appears to be, that in the one, conventional forms were much more strictly adhered to than in the other. The angular mode of treatment so conspicuous on Egyptian monuments in the delineation of every object is not observable in those of Assyria. . . . The Assyrians, less fettered, sought to imitate nature more closely, however rude and unsuccessful their attempts may have been; and this is proved by the constant endeavor to show the muscles, veins and anatomical proportions of the human figure." It was evidently a higher advance in art as well as an improved material which gave the Assyrian sculptor a superiority over the Egyptian.

In Persia, the distinction between ancient and modern sculpture is as marked as it is in India or China; for it should be remembered that while sculpture is discarded as a relic of an idolatrous age among the Muhammedan sectaries now occupying Egypt, Syria, Assyria, Persia and India, the art yet lives among the rude carvers of imagery. The modern Persians, descendants of that superior race to which the Brahmins of India, the ancient Persians, the Greeks and Europeans generally, have belonged, are the Protestants of Muhammedism; and as such retain the higher idea belonging to their lineage both of religious truth and of the relation of art to religion. The style of architecture found in the ruins of ancient Persepolis, the old seat of the Persian power, was, as we shall see in its place, much nearer in style to the Grecian than to the Egyptian; partly perhaps from physical causes requiring the roof-slant of the Grecian temple; but much more, doubtless, from the refining influence of the culture naturally belonging to the noble Arian stock peopling still Persia, Armenia, Circassia and Georgia. The same fine muscular development observed in the statuary of Assyria, united to a nicer delicacy in proportions and greater ease and grace of form and action, characterizes the relics of sculpture found at Persepolis. The men are all bearded, contrary to the Egyptian custom; the features of kings are stern, and their profiles almost Roman in prominence; they all wear the slouched sugar-loaf or flaring bell-topped hat peculiar to modern Persia; while their thick

well-fitted military coats, with capes over the shoulders, indicate at once a colder climate and greater skill in the artist. Their horses, however, are generally clumsy, ill-proportioned and stiff. Their sculptors also introduced the Oriental absurdity of mixed animal natures such as winged bulls and lions. As to the connection between the sculpture of Persepolis and of Assyria, Layard says, "They exhibit precisely the same mode of treatment, the same forms, the same peculiarities in the arrangement of the bas-reliefs against the walls, the same entrances formed by gigantic winged animals with human heads, and finally, the same religious emblems. There was no attempt even in later Persian sculpture, found in Asia Minor, to impart sentiment to the features or even to give more than the side view to the face; though there was a manifest improvement in the disposition of draperies and in the delineation of the human features."

In reference to the monuments of Asia Minor executed during the Persian dominion Layard says; "The Xanthian marbles acquired for this country by Sir Charles Fellows, and now in the British Museum, are remarkable illustrations of the three-fold connection between Assyria and Persia, Persia and Asia Minor, and Asia Minor and Greece. Were those marbles properly arranged, and placed in chronological order, they would enable even the most superficial observer to trace the gradual progress of art from its primitive rudeness to the most classic conceptions of the Greek sculptor. Not that he would find either style, the pure Assyrian, or the Greek in its greatest perfection; but he would be able to see how a closer imitation of nature, a gradual refinement of taste and additional study had converted the hard and rigid lines of the Assyrians into the flowing draperies and classic forms of the highest order of art."

In general, then, it may be observed; that the sculpture of Western and Southwestern Asia, belongs to the same school with that of Egypt; its style improving and taking on more the characteristics of classic Greece, as Asia approaches that land of art both in geographical location, and in the advancement of its people. The Egyptian is the true central representative of the whole Asiatic field of sculpture; that of Eastern Asia being the descending, and that of Western Asia the ascending scale, proceeding from the same original seat.

CHAPTER III.

CLASSIC SCULPTURE EMBODIED IN THE GRECIAN.

THE language of art given by the Greeks to the world indicates their special pre-eminence in sculpture. As the Greek tongue gave the designation *poiētēs*, or "Creator," to the man who seems to approach the "Father of Spirits," in beauty and sublimity of thought and expression in words, so that tongue gave the name of *glyptēs*, or "sculptor," to one versed in that complete art whose works approach nearest in perfection to the material hand-work of the great Author of Nature. From the latter word terms of art, consecrated in all subsequent time, have been derived to express the more finished portions of architecture, as well as the finer carvings; the very name of this branch of art being a memorial that the Greeks were the originators of Classic Sculpture. How very early this art originated among that people is intimated by Homer's descriptions of the shield of Achilles, of the bowl of Helen, and of the belt of Hercules.[1]

Winckelmann, the special student of Grecian Sculpture, has divided its history into four ages; the rude style prevailing till Phidias; the grand style inaugurated by Phidias; the graceful style of the polished successors of Phidias; and, finally, the imitative style, which began with the period when Greece was declining, and her sculptors became mere copyists of the great artists that had preceded them. The attentive student of ancient Greek and Latin authorities, especially of Pliny, and of modern critics like Winckelmann, aided by a careful comparison of relics of Grecian Sculpture preserved chiefly in the galleries of Italy and in Athens, will be able to extend this classification; suggesting additional styles, which Winckelmann has recognized as distinct, though he has not given them a separate designation. The consideration of these different ages with their peculiarities may be appropriately preceded by a brief notice of some general features of this truly Grecian art.

SECT. 1. GENERAL CHARACTERISTICS OF GRECIAN SCULPTURE.

The characteristics of a people have their origin to a certain extent, doubtless, in the climate and the face of the country which

[1] Homer, Iliad, XVIII. 476, and Odyssey, III.

they inhabit; as also in their native cast of mind. The Egyptians dwelling on a level river bottom where massiveness and elevation was necessary to make their works conspicuous, built and carved every work in colossal proportions; and living, too, in a climate where there was no rain, they covered the exterior of their edifices with minute and delicate sculptures which the storms of a Grecian winter would have soon obliterated. The Greeks, on the other hand, inhabiting a land varied in climate and surface, its breezes now stimulating and now relaxing, and the face of their country now towering into mountains now spreading into broad and level plains, could give sufficient prominence to their works with less elevation, and a rarer, as well as more enduring beauty by greater chasteness. The Egyptians, again, like all Orientals, counted repose and impassive stolidity the highest attribute of man and of the Deity; and nature gave them along their river banks the inexpressive granite and sandstone in which to stereotype their stiff heroes and deities. The Greeks were all life and animation; and nature furnished them the almost breathing marble, whose fine texture and pure white surface seemed made to be polished into forms of beauty; while also from traffic they abounded in brass, from which statues and other works of sculpture were early cast. It was the meeting of these external and internal causes that made the art of these two peoples such counterparts to each other.

Pliny's familiar, epistolary statement, though discursive, embodies much of the criticism, as well as the history of Grecian sculpture, which has reached our time. He speaks of the objects first executed in sculpture, as vases, candelabras, and table utensils; also capitals of columns, and other ornaments of monumental structures; and even of the sides of the triclinium, or dining lounge skirting the table on three sides, as adorned with sculptured work. After this came works called *imagines*, or likenesses; which the Greeks entitled *eiconēs*, because their deities were but ideal men; while the practical Romans named them *statues*, because their Cæsars when granted a statue were but men "standing."

The spirit of religious devotion among the Greeks led sculptors first to form deified beings; though as these were but heroic men of past ages there was an easy transition to heroic men of the present; *eicones* being granted to those having three times been victors in athletic contests. At first their deities were so little characterized that only their *emblems* distinguished one from another; Jupiter being known by his thunderbolt of forked arrows; Neptune by his

trident or fish spear; and Apollo by his archer's bow; while, also, the various athletes were marked by the implements or positions of their several contests.

In the advance of the art, posture, dress, sex, and æsthetic ideas came to be studied. The natural and easy posture for a sculptured figure was that of standing. Seated statues, however, were afterwards executed; especially in groups where either the subject, or the elevation of their position, as in the tympanum or gable of a temple, required. Equestrian statues, also, were early introduced; the sculptured Centaurs being of this class. Yet, again, in bas-reliefs, and even in full form, two, and even four horse chariots, with their victorious rider, were cut in stone, or cast in brass.

Yet later higher conceptions of manly proportions were designed and put in form; of which the grand style of Phidias was the culmination. To bring out truly the strength and beauty of the human form nude models were sought by Greek artists, which became so characteristic as to occasion Pliny's remark, "The Greek method is to veil nothing." Phidias, however, to realize his design draped his Minerva in the toga of peace, over which glittered the insignia of war; and to his general remark about the Greeks just quoted Pliny added, "but on the contrary the Roman and military style is to add breast-plates:" a fact which Cicero[1] makes the hinge of this moral sentiment; "The fondness of the Romans for military glory is observed in the fact that we generally see their statues robed in military array."

Then, again, the female form began to be studied and brought out, as the model of beauty at once fascinating and chastened. First, Venus the goddess of love, then the Graces were the chosen study: the peculiar eclectic spirit of the Greeks, prompting them, also, to select youth as the period of special beauty of form; both their Venus and Apollo being of the age of early maturity. Proceeding yet farther in this eclectic study, after Venus, the Greek artists conceived the form of the Amazon, or masculine woman; thus adding the robustness of the male to the grace of the female form, of which the Minerva and Diana are stated to be specimens;[2] while, also, the Hermaphrodite, the very name implying a union of Mercury and Venus, and indicating the union of female grace to manly proportions, became,

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[1] Cicero de Officiis, I. 19.

[2] This idea is very generally overlooked by lexicographers; but Pliny calls the Minerva of Phidias, an Amazon. Nat. Hist. Lib. xxxiv. cap. 8, sect. 19.

as Pliny's record and as the specimens yet remaining attest, a specially favorite subject for the Grecian chisel.

Yet other subordinate features of beauty and power were subsequently made special studies by Grecian sculptors. The eras in the history of this art among this imaginative race are made prominent by the predominance for a time of men of genius devoted to some one leading characteristic. This overshadowing spirit of the day makes it essential to group this history under different *styles* in Grecian sculpture; which styles, though successively culminating, have germs to be traced in eras long prior to their pre-eminence.

The importance of classification in the works of Grecian sculpture is indicated by their number. During certain periods of their history the whole genius of the Greek people seemed devoted to this art; the number of men employed on its works must have absorbed a large population; and the accumulations of generations were fabulous in amount. The student of art is appalled at the formidable lists of statues executed by each one of some scores of sculptors, such as Phidias and Praxiteles, which he finds in the catalogues of antiquaries. Pliny says that Lycippus alone was the author of 1500 works in sculpture; though he doubtless employed, as do modern sculptors, numerous workmen as carvers. In Greece itself there were two great centres for the execution of the art, Athens and Sicyon; among the Grecian isles two others, Egina and Rhodes; and in the colonies yet two more, Sicily and Etruria. There were, yet more, centres for the collection of these works; of which Pliny states, "Mucianus, three times consul, reported that there were no less than 3000 statues at Rhodes; and there are believed to have been a no less number at Athens, Olympus, and Delphi." If in the narrow limits of four cities there were 12,000 statues, conception fails in the effort to number all in the *country*, as well as the cities, on the main land, in the isles and among the extended provinces of Greece. We are ready for Pliny's statements that the Romans bore off 3000 statues, including 100 of colossal size, from the Isle of Rhodes; and that M. Scaurus adorned a single theatre at Rome with 3000 statues and statuettes of brass. When then we find the special names of no less than 500 statues, particularly described by Pliny, the necessity for a discriminating classification of works of Grecian sculpture becomes apparent.

SECT. 2. THE BOLD STYLE OF GRECIAN SCULPTURE; BEGINNING WITH DÆDALUS.

As the fabled originator in Greece of arts addressing the ear was Orpheus, who charmed trees and wild beasts by his lyre, so the fabled origin of arts addressing the eye began with that Dædalus whom school-boys remember as the rash experimenter with waxen wings. Dædalus, lived contemporary with Theseus, during the reign of the Judges of Israel; and the age of primitive Grecian sculpture, properly called the Bold Style, began about B. C. 1230, and extended to about B. C. 580, a period of 650 years.

Dædalus is universally recognized by Grecian and Roman writers as the leading early Greek sculptor and architect. Before Hesiod wrote, his name had become a synonym for works of sculptured beauty; Homer using the word *daidalia* for fine carvings. Diodorus and Pausanias give a list of the relics of his works in the days of the Roman Emperor Augustus, about the time of Christ's birth; when in Greece itself no less than nine famed monuments of his genius in sculpture were still admired even by the side of the works of Phidias. One of these, a naked Hercules of wood, is the early type and model of Grecian sculpture, as the embodiment of living being; the form, whether of wood, stone, or metal, showing the indwelling spirit, in posture, strain of muscles, and contortions of the whole frame, as well as in the cast and expression of the features. The original has been lost to the world in the destruction that accompanied the fall of the Roman Empire; yet it is supposed that the small bronze statues of the naked Hercules so numerously preserved in collections of art on the continent of Europe, and in the British Museum, are copies of this original work of Dædalus. The figure is naked to show the muscular development; it is in an attitude of bold advance; the right arm wields a club, while the left has a lion's skin thrown over it as a shield; and the wrinkled savageness of the countenance, with the swollen chest and contracted loins, with the strained sinews and bulging muscles, all indicate the work of a rare student of Nature living in an age of bold conception and of rude execution in art. Pausanias, besides referring often to this wooden statue of Hercules, mentions also a chorus or dancing group executed in white marble for the Gnossians and alluded to by Homer.[1]

Dædalus had numerous followers; and soon two distinct styles of the art, then called "Dædalian," appeared. One class were slavish

[1] Homer Iliad, B., vs. 590–2.

copiers of the themes and manner of the great master; while another catching his idea and his spirit went beyond their master, attempting the female as well as the male figure, and seeking robustness of frame and frankness of bearing in varied subjects. To the inferior class belonged that Epeus, the fabricator of the famed colossal wooden horse, described by Grecian and Roman poets; which, as it was mistaken for a deity by the Trojans, and as such brought into their city, must have been one of a class of kindred works known to the Greek and Trojan races. This artist, Plato and Pausanias state, wrought in wood, and produced many statues, among which were a Mercury and a Venus; the latter indicating that the finer sensibilities were not entirely uncultured even by the ruder early sculptors of Greece. It is to this class of sculptors also that were due those characteristics so finely illustrated by Winckelmann's diagrams; which show that the brow of Jupiter, cut off from the face below at the eyebrows, is in the curl of its shaggy locks precisely that of the lion; and that the neck of Hercules, separately viewed, is just that of the bull.

From the first, however, a superior order of genius caught more fully the spirit of the first great master. Smilis, a contemporary of Dædalus carved a Juno of wood, which in after times the sweet poet Callimachus admired. At a later day Endæus, called a pupil of Dædalus, made a Minerva, which Pausanias says he had seen in the Acropolis at Athens. Both the female and male deities were represented in the same active, advancing, bold attitude, and with the same muscular development; the female figures however being clothed in robes hanging in a few straight folds, having a light, graceful and ever varying flow of drapery; all the characteristics being in contrast with the rigid features and stiff attitude of the Egyptian models. Moreover, as from the first sculpture of Dædalus the true Grecian idea was the complete study of the human form, it became more and more customary to leave the figure unencumbered by drapery. To this class must also be referred the Hercules of Glyco; the celebrated Farnese, so called from the palace of Modern Rome in which it was deposited when first dug from the ruins of the old city. It was this, and kindred works, Horace had in his eye, when he satirized the stolidity which made no discrimination between the muscular "limbs of the matchless Glyco," and a "body knotted with the gout."[1] The line of more refined followers of Dædalus is closed

[1] Hor. Epist. I. i. 30.

by Dipœnus and Scyllis who flourished in the 50th Olympiad or 580 B. C.; whom Pliny mentions, as "the first of all in sculpturing marble;" first not only in using this finer material, but also in selecting the best variety; since Pliny adds, "they used only the white marble from the Isle of Paros." Their chief works mentioned were all deities; as Apollo, Diana, Minerva, and Hercules. This class of sculptors naturally introduced the next or second style, the athletic, only a little prior in point of time to the third or grand style.

SECT. 3. THE ATHLETIC STYLE, MATURED BY AGELADAS; STATUES OF VICTORS IN FEATS OF STRENGTH; ILLUSTRATED BY THE BOXER AND QUOIT-THROWER.

As already mentioned, Pliny states that "statues were first made of gods only, not of men." It is in keeping with the ideal cast of mind of the Greeks to observe that the first statues of men were not likenesses of individuals but ideals of a class. The same spirit which led Homer to select as models heroes in war like Hector and Achilles, prompted the first sculptors, who, leaving the gods, dared to picture men, to choose that class nearest the deified Hercules, men of physical prowess as representative ideals.

The establishment of the Olympic games in Greece, itself a fruit of the heroic age, tended, doubtless, to originate and establish the athletic style in sculpture. These games were instituted through Spartan influence; and date from the year B. C. 776; each succeeding Olympiad comprising a period of four years. The general design of these festivals was to encourage the cultivation of muscular vigor and of emulation for superiority in feats of strength. At the first celebration running was the only contest; at the seventh crowns were first bestowed on the victors; at the eighteenth the *pentathlon*, or contest in five different athletic exercises, was introduced; at the thirty-third the *pancration*, or trial of all kinds of strength; and at the sixty-fifth the running of men girt with complete armor.

At what era the granting of statues to victors was established, is unknown; but at this sixty-fifth celebration the athletic style in sculpture had already reached its climax of perfection under Ageladas, the instructor of Phidias. His statue for a victor, made at that era, ranked him as the first master in sculpture, and gathered to him pupils of special genius. Even Phidias himself, at the sixty-sixth Olympiad, four years later, made the statue of a victor in a chariot race. Alcamenes, also, the favorite pupil and rival of Phidias, did

not regard it beneath his genius to execute statues of the same class; and down to the latest period of the art in Greece we find some of the ablest sculptors either wholly devoted to, or occasionally designing statues of athletes.

The aim of the athletic style was to bring out the perfect anatomy of the human form, when every joint and muscle and feature was strained to the utmost tension in every variety of gymnastic exercise. The figures were evidently *ideal*, not likenesses of the victors; they were perfectly nude, showing every portion of the frame; the beard was either entirely removed, or cropped short; and every variety of position and expression was studied and copied. Famed master-pieces of the athletic style still exist in the Gladiator, called the Borghese Hero from the villa at Rome where it was found buried, the work of Agasias of Ephesus, who lived, perhaps, a century later than Ageladas; also in the Boxer and the Quoit-thrower, and in many less celebrated works.

SECT. 4. THE GRAND STYLE ENNOBLED BY PHIDIAS; MAJESTIC IDEALS OF HERO-WORSHIP IN THE AGE OF GREEK CULTURE; ILLUSTRATED IN THE MINERVA AND JOVE OF PHIDIAS.

Phidias, the great master of this and of all the Grecian ages in sculpture, was born B. C. 500; his instructor was Ageladas; Socrates was teaching philosophy at Athens during his mature manhood; Pericles was rebuilding Athens when his genius was at the height of power; and thus everything around conspired to bring forward the master of the grand style in sculpture. The grand is the beautiful and the vast in one, the union of grace to boldness; and to its attainment an age of intellectual culture is essential. About B. C. 550, a century nearly before the maturity of Phidias and the age of Pericles, Sicyon had led the way in introducing into the common schools of Greece the study of plastic art, and the training of all the youth to personal practice in modeling. Athens was not long in following the example; and all her people, therefore, thus educated, were prepared to appreciate and patronize the true artist. The age that matured a Sophocles, a Themistocles, a Pericles, and a Plato, the climactic period of the philosophic, literary, civil, and military glory of Greece, produced Phidias. It required a century of art training of the whole Grecian people and the contemporary influence of a spiritual philosophy to develop such a genius.

Phidias was truly and purely original in his studies and work; yet he doubtless owed much to his teacher and his contemporaries, as

well as to the people, whose criticisms he invited. Cicero thus hints his effort, like Plato, to attain ideal excellence in art; "Phidias, when he would make a form of Jupiter, or Minerva, did not contemplate anything from which he should draw the likeness; but in his own mind there was a certain species of select beauty, gazing on which, and fixed upon it, he directed his art and hand to execute its likeness." His success in ideal, rather than real studies, is intimated by the statement of Quinctilian the great Roman critic; "Phidias, however, has the reputation of having been a better artificer in executing statues of Gods than of men."[1]

The greatness of Phidias was enhanced by his magnanimity towards other artists. His most eminent pupils were Agoracritus, Alcamenes, and Colotes. The former was favorite with his master because he so closely copied his works and depended on him for aid in executing his own. Alcamenes was more of a rival than a pupil; of whom Pliny says, "Phidias taught the Athenian Alcamenes to be noble among the first artists;" and yet though a rival, Pliny says Phidias aided him, and "is said to have put his own hand to his pupil's chief work." Colotes, Pliny mentions as having been the "aid," or assistant of his master, in making his Olympian Jove. Besides this magnanimity towards his pupils Phidias showed generosity to his master Ageladas, who excelled in the athletic style; and to Calamis, his contemporary, who was unequalled in equestrian statuary, or in executing horses and chariots in bronze.

The peculiar characteristic of Phidias and of the school of which he was the head, was the grandeur, the high intellectual sentiment breathed into the bold style of the first great sculptor. This characteristic shows itself not simply in his single figures, but even more in his combinations, and groupings of several harmonious figures, each with their appropriate emblems and accompaniments. He was in fact to Greece what Michel Angelo afterwards was to Italy, "the grand artist;" the leading mind at once in architecture, sculpture, and painting. Pliny, speaking of the two arts of painting and statuary, throws in this clause, "both of which began with Phidias;" and he adds, "That Phidias was the most illustrious artist among all nations, no one that knows the fame of the Olympian Jove doubts."

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[1] Quinctil. Lib. XII. "Phidias tamen diis quam hominibus efficiendis melior artifex traditur."

The greatest of his single works in sculpture, was his Jove; of which Pliny remarks: "Before all artists is Phidias in his Olympian Jove made of ivory and gold." The idea was conceived by Phidias after the description given by Homer,[1] when one day passing a school-room he heard a boy reading the great poet. It was made for the temple of Elis. The image was forty-six feet high, seated upon a throne; his face was bearded, and his head crowned with olive; his person was bare down to the cincture, below which hung his pallium or robe in graceful folds. In his right hand he held a standing figure of Victory, carved in ivory and gold, with her head bound with a fillet and surmounted by a crown; and his left hand rested upon a sceptre surmounted by an eagle. The entire statue was of ivory and gold; the body, arms, and robe chiefly of ivory; the hair of beaten gold, as also the lily work and figures of animals which embossed the skirt of the robe. The pedestal and throne were of ivory, ebony and gold; its sides were surrounded with bas-reliefs; and its corners were supported by four dancing victories, each standing upon a sphynx tearing in pieces a Theban youth. The aweing majesty of this figure, overpowering men of the noblest and sternest mind, can scarcely have found a parallel in the history of ancient art.

The great work of Phidias was the adorning of the Parthenon; committed to his care, as Plutarch records, by Pericles. The chief works of sculpture were the colossal Minerva standing within the open or hypæthral cells of the Parthenon; the half colossal groups in the Eastern and Western tympana of the temple; the life-size high reliefs in the metopes, or depressions under the cornice; and the line of half size low-reliefs running completely round the temple upon the frieze inside of the columns.

The colossal Minerva, twenty-six cubits or about thirty-five feet in height, was of polished ivory and gold; the ivory forming the flesh-colored parts of the work, the robe being of gold, and the eyes of precious stones. Her helmet had a sphynx on the crest and a griffin on either side; and her tunic, open about the neck, showing the ivory bosom beneath, flowed to her feet in graceful golden folds. On her breast-plate, which was of gold, a Medusa's head of ivory was wrought; at her side, resting on the ground, was her shield with the contest of the Amazons on the front, and that of the gods and giants on the back; and on her sandals was embossed the battle of

[1] Homer Iliad, I. 528–30.

the Centaurs and Lapithæ. Upon the side of the pedestal was inscribed Pandora's history with thirty figures introduced; and on its top at Minerva's feet a serpent crawled. This master-piece of Phidias was struck by lightning in the times of Julius Cæsar, and afterwards carried to Constantinople, where it perished by fire. It is to be carefully distinguished from the larger Minerva of brass, made from the spoils taken from the Persians in the battle of Marathon, and placed outside and in front of the Parthenon towards the Propylæa. It was this latter Minerva of which Pausanias says that the point of her spear and the crest of her helmet were visible to mariners as soon as they doubled the promontory of Sunium. It is to this, too, that Demosthenes[1] refers; since this stood in full view from the Pnyx where he spoke; while the statue within the temple was almost entirely hidden by its walls and roof.

The subject of the group in the tympanum of the Western or principal front, now sadly mutilated, is apparently the introduction by Jupiter, the supreme god, of Minerva as the future ruler of Athens succeeding Neptune. Jove stands under the peak of the roof on a slight pedestal with the eagle at his feet, and his head rising to the apex. On his right is Neptune, ruler of Greece in her early days, when, like modern England, she was warlike and mistress of the sea; and behind him are grouped Mars and the deities of rougher mould. On Jove's left is Minerva, in a chariot and helmeted, the embodiment of chastened culture and feminine refinement united with military prowess; preceded by Mercury, winged and bearing a palm-branch; and followed by a train of the more intellectual deities. The figures are so arranged as to fill up the gradually diminishing height under the eaves; Jove colossal, standing in the centre upon a pedestal; Neptune and Mars, Mercury and Minerva half colossal and standing upon the ground; the next on either side seated; and the last reclining with feet extended under the eaves.

The subject of the East front is unknown; as the group was almost entirely destroyed by a Venetian bombshell, which was thrown into the centre of the temple during an attack upon the city some two or three centuries ago. The subject of the life-sized group on the metopes is the contest of the Centaurs and the Lapithæ; emblematic of the rough aboriginal tribes subdued by a more cultured race; the Centaurs being represented according to the ancient legend with a human head, breast and arms, united to the body and legs of a horse.

[1] Pausanias I. 28, 2. Demos. Orat. on the Embassy of Æschines.

The long line of sculpture in low-relief running quite around the temple within the colonnade, and on the back of the frieze, is a procession, apparently in honor of Minerva's entrance upon the sovereignty of the city.

In the sculpture of the Parthenon, the most perfect of that or of any age, these great principles are observed. The fully sculptured figures, and those of colossal size, are all deities; the human figures are of life, or half size, and in relief. In the sculpture of that age, the perversion of mingling animal attributes with human to create a superior being, was rejected; these relics of Egyptian taste, with the single exception of Mercury modeled like a modern angel with wings, being confined to the parts of the works represented as not living, but embossed images. The Minerva is, of course, supposed to be a living existence: but the sphynx, with human head and lion's body, and the griffins with eagle's head and wings and lion's body wrought upon the helmet of Minerva, are *designed* to be only copies of Egyptian ideas; while, too, the Centaurs with a human head and body united at the neck to the body of the horse, are designed to be only an embodiment of an ancient fable. The physical, as well as the moral cast given to the sculpture of this age, is of the highest order of excellence; the life and grace of the human figure is as perfect as man's work can well be; and the horses, lions, oxen and even the serpents, in all their parts and postures, are as complete a study of nature as human art has ever attained.

SECT. 5. THE GRACEFUL STYLE; PERFECTED BY PRAXITELES; IDEALS OF PHYSICAL BEAUTY ILLUSTRATED IN THE VENUS DE MEDICI, OF INTELLECTUAL GRACE IN THE APOLLO BELVIDERE, AND OF COMPOSITE SYMMETRY IN THE AMAZON AND HERMAPHRODITE.

The perfection of manly nobleness, the early ideal of the Grecian sculptor was reached by Phidias; and there was left no field for improvement except it were in a more delicate grace of outline and a more elaborate finish of detail, belonging to female loveliness. The pupils of Phidias who shared his genius, instead of being mere imitators of their master, sought original excellence in this particular.

It should be observed here, however, as in all the history of art, that different styles are not to be separated from one another by fixed chronological lines. Myron, whose works preceded those of Phidias by a few years, seems to have been the earliest who attained excellence in the graceful style; and from him, as well as from their

immediate master, the pupils of Phidias must have learned. Of Myron, Pliny speaks as the one who first seemed "to have multiplied truth;" which he seems to explain by the statement that he first made practical the idea that true beauty in the human form consists in the accord of the parts with their natural destination; and that, therefore, the forms of the racer and the boxer are beautiful when the strained muscles of the legs and arms, which otherwise would seem distorted and cause a painful impression, are in keeping with the action expressed. In farther illustration of his style, Pliny speaks of Myron as "more attentive to symmetry," than preceding sculptors; Quinctilian characterizes his works as "more delicately wrought than those of Calamis," and other artists of his time; and Cicero says, "although the works of Myron had not yet sufficiently attained to truth, yet they were such as you could not hesitate to call beautiful."[1] Myron, therefore, the predecessor of Phidias, though not a perfect master, was yet a leader in the style called beautiful or graceful.

To Praxiteles, however, the pupil of Phidias, the honor of being chief master in this style is generally attributed; though it is in the works of his pupils and successors, copied from their master, rather than in his own, that his fame lives. Praxiteles, wrought in both marble and brass; Pliny stating, "Praxiteles was more successful in marble, and for this reason was the more renowned. He made, nevertheless, from brass, most beautiful works." Phidias' bolder conceptions had been wrought in less generous material; but Praxiteles chose marble to which delicacy of finish is most allied; while even in coarse brass he had the touch that calls forth beauty. So exalted is Pliny's estimate that he names the age after him, saying, "We have spoken of the age of statuaries, as the age of Praxiteles." His works, among others, were statues of Mercury, Bacchus, Diana, Ceres, and other gods and goddesses; but pre-eminently of the *real* living female beauty "Phryne," the courtesan, and of the *ideal* goddess of beauty and sensual love, Venus. The only work of his that now exists, probably is to be found in the bas-reliefs upon the frieze of the Parthenon.

The famed Venuses of Praxiteles, and also his Phryne, renowned as the most matchless forms of female grace, no longer exist; except in the copy by Scopas, the famed Venus de Medici. The model, Phryne, was a Grecian female of rarest grace of form, who lived at

[1] Pliny, xxxiv. 19; Quinctilian, xii. 10; Cicero, Brut. xviii. 70.

Athens in the days of Praxiteles; a female of loose morality, yet for a time, a favorite of the great artist on account of her beauty. Apelles, the painter, saw her bathing and took her as the model for his Venus Anadyomene. Praxiteles had her stand nude for a statue of her real form; and then took the same as a type for his ideal Venus. Pliny characterizes two statues of Praxiteles noted in his day as "expressing different affections; one, those of a weeping matron, the other, those of a rejoicing courtesan." This latter he supposes to have been Phryne; which, he says, is inferred "both from the love of the artist for her, and from the mercenary expression in her countenance." Like other votaries of beauty, as illustrated in the modern American Powers, Praxiteles had one chief ideal which gave tone to all his works; his Venuses being his favorite Phryne. "Before all works," says Pliny, "not only of Praxiteles, but in the whole world, is the Venus; in order to see which, many have made a voyage to the isle of Cnidus." He adds, that Praxiteles made two at the same time, and offered both for sale; one veiled, the other nude. The islanders of Coos, who had the first choice, "preferred the veiled statue as severe and chaste. The Cnidians bought the rejected one; and by this statue Praxiteles ennobled Cnidus. The little temple built for it was entirely open, so that the effigy of the goddess could be viewed on all sides; nor was there less admiration upon whatever side it was scanned." No statue ever called forth such universal and unqualified plaudits from the lovers of art in ancient times; as no statue in modern times has been so admired as its copy, the Venus de Medici. Poets and orators, Grecian and Roman, allude to it; and critics like Lucian,[1] analyze the elements of its grace, as seen in the posture, the hands, feet, and back, and in the head, hair, eyebrows, eye, and every feature.

After Praxiteles, Scopas is to be mentioned as eminent in the school of the Beautiful. There has come down to our day a peerless form, called the Venus de Medici, because when rescued from the ruins of Rome, it was purchased by the noble family of the Medici, and placed among their art collections at Florence. Scopas, its probable author, living a little later than Praxiteles, was engaged in adorning the great temple of Diana, at Ephesus, and other architectural works; but his great glory was his numerous single statues. Pliny comparing him with Praxiteles and other sculptors, says, "The fame of Scopas vied with these." In mentioning the work of his

[1] Lucian Amor, xiii. and xiv.

supposed to live in the Venus de Medici, having before spoken of several of the statues of Scopas which adorned the Flaminian Circus at Rome, Pliny says, "Moreover, his nude Venus in the Flaminian Circus, surpassing that of Praxiteles, is a work that would ennoble any other place." Amid the ruins of fallen Rome the arms of this peerless statue yet lie buried; the right from the shoulder and the left from the elbow were restored by an Italian artist. These are by some critics regarded as unworthy of the matchless form to which they are appended; while the most casual observer cannot resist the displeasing impression of the snowy white new arms pieced upon the sober grey of the soiled antique, which they seem to mar. In this work Venus is represented as coming from the bath; and as if startled by the approach of some one, she is turning her head slightly to one side, her eye is cast upward, as if to avoid meeting the gaze of the intruder, while her right hand is thrown forward to veil her breast, and her left to screen her middle. The artist's ideal is a girl just matured, of sanguine temperament, perfectly alive with the quick sensibility belonging to feminine delicacy; while every gesture is radiant with the grace of position and movement that attends chaste impulses. In all these respects the Venus de Medici is the counterpart of the sadly reflecting, the subdued and shrinking being, accustomed to be scanned by vulgar eyes, yet sorrowfully averting her face from sensual gaze, which Powers has conceived and executed in his Greek Slave.

The posture, the expression, the curve of every limb, and the rounding of every muscle in this Venus, has in ancient and modern times alike called forth a lavish expenditure of admiration such as no work of art has ever excited. Ovid[1] extols the grace into which shrinking modesty has thrown her posture; and also to the fascinating roll and the pinkish lustre of the eye of love in Venus, so in contrast with the yellow tinge of unimpassioned intellect in Minerva. Terence alludes with warmth to her full and gracefully tapered chest; condemning the mothers who, in his day, sought to enhance their daughters' beauty by "drooped shoulders and a laced waist;" as if they could thus improve on "Nature's good work." Winckelmann and other modern critics have devoted pages to separate beauties in this matchless form. In speaking of the foot and of the head as the modulus for other parts of the body, Winckelmann urges that it is an approximate, not an

[1] Ovid Art Amat., II. 614, 616, 657.

arbitrary rule which the ancients laid down, citing as proof the proportions of the Venus de Medici; whose form is uncommonly slender, her head unusually small, and her foot long; her height being seven and a-half heads and less than six measures of her foot; which is a palm and half an inch, 9.3 English inches long, and her height six and one-half palms, or 4.76 English feet.

The spirit of the style called graceful exhibits itself in the selection of youth as models for deities such as Bacchus and Apollo. Pliny records of Praxiteles, the master in this style, that he made "puberem Apollinem" a youthful Apollo. Several sculptors of the same school are mentioned as having made statues of Apollo; some nude, and others more or less draped. To this age, or at least to this class, that model of ancient sculpture, next to the Venus de Medici, the Apollo Belvidere belongs; though, as a remarkable instance of the uncertainty of fame its immediate author is unknown. Some, indeed, have regarded it as the "Apollo Allexicacos," Apollo the deliverer from evil, which was the work of Calamis, the contemporary of Phidias, mentioned by Pausanias,[1] which was modelled after the Apollo Toxeos, or archer, of Phidias; while others have believed it to be another Apollo of Calamis referred to by Pliny thus, "In the Servilian gardens I meet with the lauded works of Calamis, especially the Apollo of that sculptor."

This Apollo was called Belvidere from the Italian *belvidere*, French *bellevue*, or cupola of the Vatican palace, where it was placed by Pope Julian II., when found amid the ruins of Antium and purchased by that Pope in the Fifteenth Century. It is seven feet in stature; nude, with the exception of the pallium, or small cloak, hanging over the left shoulder and arm. The god stands with a quiver hanging over his right shoulder, a bow in his right hand with his feet and arms extended, his head thrown slightly back, and the eye distended, indicating that he has just hurled his arrow. The brow especially of this Apollo has been the theme of admiration; the facial angle approaching a right angle and being expressive of the highest order of intellect. Winckelmann, with his peculiar penetration, has noticed the fact that the left or retired leg of this statue is made longer by two inches, and larger proportionately than the other; and as he finds the same peculiarity in ancient Egyptian statues and in the Laocoon, he deduces from it a principle that ancient sculptors sought to compensate for the apparent diminution

[1] Pausanias I. iii. 2.

of a retreating or foreshortened limb by giving it an increased size. He notices also the measurements of the Apollo similar in principle to those of the Venus; the height being a little more than seven heads, while the foot upon which he stands is one-quarter of a Roman palm, two and one-fifth English inches longer than his head. The arms of the Apollo, as those of the Venus, are modern; the parts below the elbow having been broken off and lost, and supplied in the revival of art by an Italian artist. The Apollo Belvidere, in features, limbs and posture, is modelled after the graceful style; while the exalted brow has made it for all succeeding ages the embodiment unequalled of the beauty which superior intellect gives to manly proportion.

The next natural step, in the advance of this style, was the effort to graft manly grace upon a female form in the person of the Amazon. As already remarked, the Minervas of Phidias, and of earlier sculptors, were really the offspring of this same idea. The most celebrated of Amazons proper was by Polyclitus, who lived in the age of Praxiteles. Among his works were boys, naked contestants, women carrying baskets. The most celebrated of these was the youth called "The Crowned," of which Pliny says it was "voluptuously" wrought, and which Lucian styles "the beautiful work of Polyclitus;" and also the Doryphorus, or spear-bearer, called by Pliny "the boy wrought in manly style." Pliny makes this special note of Polyclitus; "He made also a statue which artists call a *canon*, from which as a fixed standard they derive the *lineaments* of art; and he alone of men is judged to have embodied art itself in a work of art." Upon the Amazon as the ideal of beauty in which Polyclitus excelled, Pliny remarks, "The most lauded of Grecian sculptors came into comparison, although born in different ages, when they made Amazons. When several of these were consecrated in the temple of Diana at Ephesus, it was agreed that the one should be selected as most approved in the judgment of the artists themselves, which each of the artists interested placed as second to his own. This was the Amazon of Polyclitus; and the next after that the one of Phidias."

The final effort of the graceful style was the study of feminine delicacy as refining masculine forms; the Hermaphrodite, or Mercury-Venus, the grace of woman incorporated into man's mould, being the embodiment of this special idea. The master-work of this kind, one now existing and often copied, is that of Polycles thus referred to by Pliny, "Polycles made a noble Hermaphrodite." This figure, preserved in the Villa Borghese at Rome, is reclining with the face

downward; in part to hide its natural deformity, and in part to present its rare form to better advantage. The hands of this statue Winckelmann regards as among the most "beautiful of female hands." On this general class of sculpture the suggestions of this critic are minute and discriminating.

The view of this style of Grecian Sculpture would be incomplete, unless allusion were made to the fact that Praxiteles and his school after him introduced the coloring or tinting of their statues. The consideration of this subject, however, both as to the nature and propriety of the method, belong rather to Painting than to Sculpture. Sculpture proper presents form alone, not color; and the more rigidly the attention is held in the study of art to a close analysis, the more discriminating criticism becomes. Were this feature of the method of the school of Praxiteles properly introduced here, it might allow that his style be characterized by the general designation used by Winckelmann, the Beautiful; rather than by the term Graceful, which is restricted to form.

Sect. 6. The Historical Style, dignified by Lysippus; Sculptured Likenesses of Living Men with ideal Accessories; Illustrated in Busts and the Statues of Alexander.

The styles of sculpture thus far considered demand the embodiment of ideal, not of real images. The deified heroes of the past, as gods and demi-gods, were imaginary beings; while the contests of the arena were fictitious triumphs, and the sculptured victors specimens of a class, not real personages. Indeed, later sculptures in bas-relief, as in the Parthenon, commemorating achievements of heroes of the artist's day, were, from the nature of the case, too small to present positive likenesses of the men whose deeds they recorded. It was a distinct, and, in one sense, higher style, when exact likenesses of living men were cut in marble; and the artist sought to catch in sculpture not the blank inexpressive cast of features, but the expression most characteristic of the subject, or one transcending the original.

In this branch of art as in many a field of invention it seems to have been, if we may credit Pliny, woman's love, stimulating her quicker intuitive suggestions, that discovered a practical and certain method of taking likenesses in sculptured form. As affection demands an embodiment of an object beloved that may be kept present when that object itself is absent, it is natural to suppose that this strongest desire of human nature prompted first the method

of taking life-like impressions of human features. Tracing the early history of Grecian statuary Pliny[1] makes this record of an artist, or artisan, who lived about B. C. 500. "Dibutiades, a Sicyonian potter, first invented, at Corinth, a mode of taking likenesses in clay. It was really the work of his daughter, who, being in love with a young man who was to make a voyage to a foreign country, traced the shadow of his face cast by a lamp on a wall; from which outline her father made the portrait of the youth in clay impressed upon the drawing, and then conceived the idea of hardening it with other pottery by fire." Probably, therefore, the method of taking casts directly from the face was known to the Greeks.

The historic age proper seems to have commenced with Alexander the Great. Hence though we have correct likenesses of the men after that day, as of the statesmen and warriors of the last days of the Roman Republic and of the early Emperors, there are no really authentic likenesses of men preceding the days of Alexander. It seemed to have been a passion with Alexander, as it was with Napoleon in later days, to have copies of his features multiplied by such artists as Lysippus the sculptor, Apelles the painter, and Pyrgoteles the engraver; an ambition which prevailed extensively after his time, and especially among the Roman patricians. In sculpture, Lysippus was the great originator of the historic style. He executed in marble a series of likenesses of Alexander from his boyhood to his manhood, in complete statues of life-size.

The idea of executing heads alone, arose in part at least from the influence of the historic style; though it had also its foundation partly in the graceful or beautiful style. It was natural that the head should be made a chief study by artists, since its lines of grace are the most beautiful, and since also the expression of the features gives character to a statue. In the execution of the forms of men of intellect, and indeed of ordinary male or even female figures, the head is so truly the *work* of the sculptor that the cost of time and material for the execution of the entire figure may well be regarded unworthy the toil of a great artist. As in painting so in sculpture, heads alone, busts as portraits, came to be the artist's chosen work. Myron, the early sculptor, excelled in the heads of his statues, or whole figures; while after Phidias' day, as Apelles painted only the head of his most famed Venus, so great sculptors carved heads alone. Pliny in

[1] Pliny xxxv. 43. Pliny's word for likenesses is "imagines," and for portrait "typum."

mentioning two ancient busts held in great esteem, brought to Rome by P. Lentulus the Consul and placed in the Capitol, records the names of their authors as two artists most eminent in this style of sculpture. One of these, Chares, a pupil of Lysippus, was, as we shall see, admired by Cicero and other eminent critics as master in another department; that head so much extolled being colossal in size, and thus partaking of that other style in which he also excelled.

After the age of Alexander, especially in the Augustan age of Rome, busts became a favorite mode of handing down the features of eminent men; and simple heads, or heads with the breast and neck cut in marble, as also Imperial features in high relief on medallion plates and in low-relief upon coins, became common. The Greek word used to signify a bust is supposed to indicate their late origin; the word *protome*, originally referring either to the forepart of an inanimate object or to the face of an animal, being used in distinction from *prosopon*, the face of a man, to designate the half of a man's entire figure down to the waist; while the bust proper, or the head with the breast, was called *thorax*, the term still preserved by anatomists. In the Latin, Pliny used the word *capita* for sculptured heads or busts, and *vultus* for painted heads or portraits. By an interesting analogy the English word "bust," signifying the breast as distinguished from the head, is derived from the Latin *bustum*, a term designating the funeral urn; which like the bulging breast of the human form stands as the type of all the nobler part of the living man. In the later days of art in ancient Rome that peculiar species of "antiques" so-called, originated, which has the head carved in white, and the bust in colored marble. Pliny in one of his letters,[1] highly commends, as the visitor to the Roman galleries now must, the artistic taste of the busts so numerous in his day; yet hinting their incompleteness as works of art by the remark, "And indeed, if you should behold a head of a statue, or some member torn off, though you might not be able to arrive at the congruity and harmony of the whole, you could nevertheless judge whether that part itself was elegant."

SECT. 7. THE IMPASSIONED STYLE; INTRODUCED BY SCOPAS, AND CULMINATING IN AGESANDER; STATUES EMBODYING IDEAS OF PHYSICAL AGONY AND OF MENTAL ANGUISH: ILLUSTRATED IN THE LAOCOON AND THE NIOBE.

As the different styles of Grecian sculpture overlap and interlace one another in point of time, so they often seem blended in the same

[1] Pliny Epist. Lib. II. epist. 5.

artist. In fact each class of excellences must be combined to a certain extent in every great master; while, nevertheless, every leading spirit in any sphere will excel in some one line.

Dalloway, though following Winckelmann's limited division of styles, and bringing in several that are distinct under the general heading of the Beautiful, presents this style in its connection with those preceding. His words are: "To give sublimity to beauty, the artists of this style united manly and womanly attributes together; as in Minerva and Apollo. Beauty of repose was sought by the earlier sculptors of this class in the Apollo; beauty of suffering was the aim of later artists as seen in the Laocoon and Niobe."

Lysippus, the great sculptor of the age of Alexander the Great, taught principles to his pupils which made them to become leaders in a yet more advanced style of art. The bold style of Dædalus sought to express energy and daring; the athletic style added the physical power of gymnastic training; the grand style of Phidias presented a quiet intellectual dignity; the graceful style of Praxiteles threw a charm of quiet unimpassioned loveliness over the whole figure, especially of woman; and the historic style gave expression to the characteristic, or ordinarily moving impulse of individual men. It was a yet added department of art when passion, too overwhelming to be anything more than temporary in the sufferer, too unnerving to be endured long even by the beholder, and yet as the tragedy of art having a strange power of fascination over the minds of men, came to be cut in all its truth and life into enduring marble; giving first to physical torture its scowl of agony, and then to mental anguish its speechless voice of woe. This new and added feature in sculpture, is indicated by the famous art maxim of Lysippus, quoted by Pliny. In reply to Eupompus, the painter, who asked which of his predecessors he should follow, Lysippus replied by pointing to a crowd of men all differing in their impulses and attitudes, and saying, "That Nature herself was to be imitated, not the artist." Another of the maxims of Lysippus was embodied in his remark about himself that "he made men as they *seemed* to him; not as they were." Lysippus, besides his statues of Alexander the Great, executed a hunting group with dogs, and modeled a series of groups of the "Labors of Hercules;" which, of course, required the greatest variety in animated posture and impassioned expression. It is when speaking of Lysippus, that Pliny remarks: "The Latin has not the word *symmetry;*" and adds, "which quality he cultivated most diligently, by changing the proportions assumed by the ancient

statuaries, and introducing a new and untried system. He added much to the art of statuary by expressing the hair, by making heads smaller, and bodies more graceful and less bloated, through which the height of statues seemed greater." Probably while the principle of foreshortening is here referred to, there is more important reference to the angular sharpness of limbs, the towering of the whole frame, and the swelling of the chest, caused by the writhings and contortions of men in agony, which made the head seem small as compared with the distorted body. Quinctilian and Propertius[1] spoke of this characteristic of Lysippus; the former alluding to his work as embodying "natural expression," and the latter calling his statues "*animosas*," or impassioned. All these statements indicate that this great artist practically carried out the suggestion of Socrates to Cleiton, that the sculptor should "represent in the form the workings of the soul." He was thus in execution, as well as theory, the suggester of the impassioned style of Grecian sculpture.

Several specimens of this style of ancient tragic sculpture, the work of a series of artists of great genius, have come down to modern times admired through all the past. First among this class in point of merit, though last in the time of its execution, is the group of Laocoon and his sons, now preserved in Rome. It represents Laocoon, the priest of Apollo, and his two sons, struggling with the two immense serpents from the sea, as fabled in the siege of Troy and as pictured by Virgil after this group in marble. Pliny speaks of it at his day as standing in the baths of Titus; and there, at the revival of art after centuries of oblivion, it was found, still filling its old station. Pliny ascribes it to the sculptor Agesander of Rhodes, with his son Athenodorus and his pupil Polydorus, who lived in the days of the successors of Alexander; and he says the elder artist carved the father while the young men carved the sons. Pliny makes the history of these three sculptors, working together, to give turn to the sentiment that glory in art cannot be confined to one individual; and says that it is a "work to be preferred to all others, both in painting and sculpture;" adding, "Made from one stone, both the father and his children, and the folds of the dragons," this work of the "Rhodian family" is a "wonder of the agreement in conception of different minds." A cool critic like Winckelmann may separate out parts to be viewed alone; and may dwell, as he does, on the surpassing beauty of the lower limbs of both the father and his sons.

[1] Quinct. xii. 10; Propert. iii. 7, 9.

The soul of the artist, however, was evidently swallowed up, as the beholder's now is, with the agony and giant struggling evinced by the strained muscles and the contorted features of the sufferers. Though in detail a work of rarest beauty, it is strictly an embodiment of the conception of physical agony; and as such, stands at the head of sculptures in a distinct style, appropriately designated the Impassioned.

Next to the incomparable Laocoon as a masterpiece in this style, is the "Niobe, and her dying children;" the mournfully pleasing theme of poets as the embodiment of mental anguish. It is the fruitful Lydian mother, whose children were struck with death for her irreverent pride at their number and promise, suddenly turned to stone, as if petrified in her tearless grief. Of its author, Pliny records, after speaking of the Venus which became a model, "There is equal hesitation as to the dying children of Niobe in the temple of Apollo Sosiani, whether Praxiteles or Scopas made it." No sensitive observer can view this statue without carrying throughout life, the idea of grief too deep for tears.

Yet a third group in this style is the "Toro Farnese," or Farnesian Bull, so called from the Palace at Rome, in which it was deposited when found. It was another work of Rhodian sculptors, brought to Rome in the early conquest of that island. It was according to Pliny the work of two brother artists, Appolonius and Tauriscus, and is an embodiment of the legend of the inhuman mother Dirce, seized by her own two sons, Zethus and Amphion, who were enraged at her brutality, and tied by their hands to the wild bull to be dragged to death. The muscular energy of the youth who holds the furious bull by the nose, while his brother binds the mother, frenzied with mingled rage and fear, to his back, absorb the beholder by the fascinating spell of exciting tragedy in sculpture.

A fourth master-work in this style is the famed Dying Gladiator, once supposed to be the work of Ctesilaus, contemporary with Phidias, of whom Pliny says, "he made a wounded man sinking in death; in whom it can be seen how much of life remains." That work, however, was of bronze; but its mention indicates that the germ of this style had been developed as early as the days of Phidias, while its culmination, both from the laws of progress in thought, and in the actual history of Grecian sculpture, takes its place as the last step in the advance, preceding the decline, of Grecian art. Anatomists, like Bell, dwell upon this last work with admiration; and the common beholder is riveted, as by the real scene of death while gazing on the Dying Gladiator.

SECT. 8. THE COLOSSAL STYLE; CULMINATING UNDER CHARES; THE EFFORT TO MAKE GIGANTIC MASSIVENESS TRULY ARTISTIC; ILLUSTRATED IN THE COLOSSUS OF RHODES.

It was in some respects a step backward in the progress of art, when the Colossal style in and for itself began to be cultivated. The Egyptian artist had sought to attain grandeur, not by giving life and expression, all that makes up character, to a human form of ordinary stature, but by adding massiveness to mere gross fleshly proportion. When a statue of colossal proportions is designed for an elevated position, and to its gigantic size is added by the power of genius, grace, as well as grandeur, when life and expression show themselves in the form and features, then a colossal statue is a triumph of art. Such was the Minerva of Phidias; and such are numberless works of similar character executed in modern times. When, however, the chief effort of the artist is to impress the beholder with the *size* of his statue, and propriety and nature are sacrificed to this idea, a just criticism always has characterized the work as a mark of decline in true art. Pliny's expression in introducing his history of colossal statues, is: "Of audacity, the examples are numberless," and he adds: "Speaking, in fact, within bounds, we have seen masses of statuary, which they call colossal, equal to towers." His form of statement is a sufficient indication of his critical judgment. The two entirely distinct orders of colossal statues referred to are always to be carefully discriminated.

Here, again, it is to be noticed that this, as other styles of Grecian sculpture, had its very early originals. No classic student can forget the colossal horse, "like a mountain" in size, reared "by the Divine art of Minerva," in whose sides, among the Greeks introduced with the horse within the walls of Troy, was "Epeus, the fabricator of the deceit;" the description of which, by Virgil, is one of the most fascinating fragments of ancient poetic fiction.[1] Plato and Pausanias allude to this early sculptor in wood, indicating that he was a true, though a rude artist; and they mention a Venus, a Mercury and other works in wood from his chisel.[2] Phidias' great works, too, were colossal. The comprehensive Lysippus made two colossal statues, one of Jupiter, and another of Hercules; the latter of which, Pliny says, was forty cubits, or sixty feet high; too large to be removed by the Roman conqueror who appropriated so many of

[1] Virgil Æneid, Book II., vs. 14—329. [2] Plato, Ion. I; Pausanias, ii. 19, 6.

the masterpieces of Grecian art; while of the former, he relates, "Though it could be moved by the hand, such was the plan of its balance, it could be thrown down by no tempests." While, however, the exuberant genius of this artist allowed him to resort to lower artifice which opens the way for corruption in art, his numerous works are thus characterized by Pliny: "He is said to have executed works to the number of 1500, all of them of so great merit that every single one might give celebrity to any artist."

Lysippus was the author of one work which the world will not willingly let die. There stands at the present day, in front of the magnificent Church of St. Mark's in Venice, a chariot drawn by four prancing horses of most exquisite form, admired alike by artists and amateurs. That magnificent work was executed by Lysippus, and dedicated as the chariot of the sun; the ideal favorite with Egyptian and Oriental artists before and after Solomon's day.[1] Designed at his home in Rhodes, it afterwards became the glory of the Isle of Chios. Thence it was borne by the Roman Constantine to adorn his new capitol on the Bosphorus; thence again in the conquests of the Venetians it was taken to their Island City and became one of its chief attractions; thence yet again during the conquests and art-appropriations of Napoleon in Italy it was transferred to Paris; and thence, finally, it was returned to be the property of the last in the list of its successive claimants. There it now stands, called "the travelled horses;" one of the proudest surviving monuments of Grecian sculpture in the colossal style.

Of the celebrated wonder of the world, the Colossus of Rhodes, at once a most famous and instructive specimen of this class, Pliny has given a full description; while Cicero has vouched for the merit of the artist who constructed it. It was by Chares, the pupil of Lysippus, a native of the little town of Lindus in the Isle of Rhodes; and it was to adorn the principal port of his native island that the artist devoted to it so much labor. The statue was seventy cubits, or about 105 feet high; it was made to stand astride of the narrow entrance to the beautiful land-locked harbor; and between and beneath its extended legs, as an open portal, the ships that frequented that port passed without inconvenience. Erected shortly after Alexander's time, the statue was thrown down by an earthquake only fifty-six years afterwards; and Pliny, who describes it, saw it only in its ruins. "It seemed," he says, "a miracle. Few men could with their

[1] 1 Kings xxiii. 11.

arms embrace the thumb. The fingers alone were larger than ordinary statues. Vast caves yawned in the broken limbs." He adds, that when thus broken it was observed that the interior hollow of the massive legs had been loaded by the artist with stones in order to aid in its stability. The colossal head so admired at Rome, also Cicero's testimony in his Rhetoric, show the originality and power of the artist; Cicero's words being, "Chares learned from Lysippus to make statues, but not in his manner. Lysippus, indeed, exhibited the head of Myron, the arms of Praxiteles, and the breast of Polycles; but Chares, who personally saw how his master made all his works, was able either to make a study of the works of others, or to be guided by his own genius."[1]

The climax of what Pliny calls "audacity" seems to have been reached, though only in conception, by Dinocrates; who proposed to cut Mt. Athos on the coast of Macedonia into a head and bust of Alexander, making the hands to rest on spurs some distance from its foot, in one of which a town was to be built, and in the other a lake, into which all the waters of the mountain were to be conducted. Alexander with his practical sagacity, which overbalanced his vanity, is said to have suggested, that there would be no cultivated country around the proposed city to support its inhabitants; and he employed the bold artist as his architect for the city in Egypt, which was to bear his name. The corrupted taste which was infused into Rhodes, that centre of classic art, by inferior imitators in the colossal style, so liable to abuse, is traced in Pliny's statement, that, in the Island of Rhodes alone at least 100 colossi were found at the Roman conquest; some of which, transported to Rome, sowed seeds of early degeneracy in the sculpture of Italy.

Sect. 9. Roman Sculpture; linked with the Grecian, in the early perfected Etruscan, in the collections captured in Greece, and in the Grecian taste characterizing Roman Sculptors.

Sculpture expatriated from Greece passed from its native home. Its own masters never were fully themselves out of their native clime; for in the Asiatic colonies on the Ionian shore, sculpture never flourished, except at the little Isle of Rhodes; while in the Italian colonies called Magna Græcia, though permeated by the Pythagorean philosophy, none of the fine arts reached eminence. Under Etruscan artists transplanted to a foreign soil so young as to take

[1] "Sua sponte;" Cicero Rhet. ad Heren. I. 4, 6.

natural root, Grecian sculpture so flourished in the early days of Rome as to vie with Greece itself. But a long night of decline settled down upon this art in Italy, until the Roman conquest of Greece hastened the sunset of art in its own native clime, and, transferring all that remained of its glory to the Imperial City, shed a temporary and twilight radiance on that foreign soil. In the history of Roman sculpture three phases are to be distinctly marked.

Directly north of Rome, coming down in fact to the northern bank of the Tiber and to the walls of the Imperial City, and thence extending to the north of modern Pisa and east of modern Florence, was a country settled in very early times by a colony from Lydia, the central and chief Grecian colony on the western coast of Asia Minor. So ancient was the settlement of this country, that, even when Herodotus wrote, its early history was so remote as to be legendary. All authorities however agree that these near neighbors to Rome originated from that mingled Grecian and Oriental people, who united the vigor of colonial enterprize with that mental comprehensiveness which comes from foreign intercourse. The region they peopled was called Etruria, sometimes also Tuscia; the former of which names is preserved in the famed Etruscan vases, the loveliest relics of ancient plastic art; while the latter name still lives in the familiar designation of Tuscany, the portion of Italy which to this day is pre-eminently the home of sculpture and painting. The Etruscan colony indeed was like that called Magna Græcia in the south of Italy, in whose centre Pythagoras spent his life and planted his philosophy. Their relics of art familiar to the later Romans, were the vases already mentioned;[1] also gems, medals, sacrificial vessels, mirrors of rare workmanship, statues of ancient kings, and the Jupiter Capitolinus of baked clay lauded by Pliny. Its artists, moreover, were the builders of those ancient and wondrous specimens of massive architecture in Italy, such as the Cloaca Maxima at Rome. These Etruscan monuments show the power of Grecian spirit in art, triumphing as it did, at so early a day over a rude and warlike race.

The early taste of the Romans we have reason to believe was like the character of her people rude and severe. The Etruscan works which adorned Rome in its infancy were designed by the cultivated people north of that city who built them for their stern and rough lords. Numa, the second Roman king, a man of philosophic and

[1] Book III., chap. i. sect. 3.

peaceful pursuits, taught the people a simple spiritual worship; and for more than a century and a half no image of deity was allowed to be adored. The influence which such a belief and practice, in contrast with that of Greece, must have exerted to restrict the culture of art, is easily anticipated. During all the long centuries in which the Greeks were, generation after generation, advancing to the climax of perfection in sculpture, the Romans made no progress.

Such, indeed, seems to have been the condition of things up to the period when the monuments of Grecian art began to be brought by Roman Generals as trophies of their victories to Rome. Pliny and others have recorded the history of these collections; and also the fact, that the Romans, as a people, were uncultured to appreciate the treasures brought to their doors. Less than two centuries after the peerless artists of Greece finished their works, such Roman Generals as Marcellus, Mummius and Scylla were ravaging the cities of Greece, and demolishing what they could not bear off. Of Marcellus, who took Syracuse in Sicily in the second Carthaginian war, Livy[1] says, "Marcellus bore off to Rome the ornaments of the city, the works of sculpture and painting with which Syracuse abounded;" and he adds, "then was the first origin of admiration for works of Grecian art." Pliny relates that "M. Scaurus when ædile built a theatre," which he adorned with "three thousand brazen statues," brought from abroad. "Mummius, on the conquest of Achaia, including the cities of Thebes and Corinth, filled the city with statues. The Luculli also brought in many. Mucianus, three times consul, reported that there were no less than three thousand statues at Rhodes; and there is believed to have been a no less number at Athens, Olympia and Delphi."

How little the Romans as compared with the Greeks were prepared to appreciate Grecian art is abundantly manifest. Of Mummius we are told that he threatened the common laborers, who were packing the paintings and sculpture taken from Corinth, that if any were injured or lost, they would have to make others; as if only hand labor were required for the execution of such master-pieces. Pliny tells us, that the Roman generals brought away Asiatic statues of wood and clay, as well as the master-pieces of Greece in bronze and marble; seeming to imply that they did not discriminate between the two. Even Pliny himself, after the statement he makes of the thousands of the works of art thus brought to Rome at so much cost,

[1] Livius Lib. xxv. sect. 40

exclaims, "What mortal could go through this collection?" "Or what use can be perceived as derived from them? Nevertheless it affords pleasure to have slightly examined these renowned works, by whatever reason one may be prompted, and to have known their authors."

A great influence however was evidently exerted on the popular taste for art by these collections at Rome. Horace[1] writing in the age of Augustus penned the oft-quoted lines,

> "Græcia capta ferum victorem cepit, et artes
> Intulit agresti Latio."

Captured Greece indeed found its victor uncultured, and brought the arts into rustic Italy; and its influence in the days of Horace was just being seen. Suetonius records that the favorite boast of Augustus was this; "urbem marmoream se relinquere, quam lateritiam accepisset." If the first Emperor could thus truly say that he left a marble city where he had found a brick one, a great advance in love of art must have been accomplished among the Roman people, before and during his reign. That same climax of perfected culture, long delayed among the Romans as compared with the Greek people, produced the most polished of orators Cicero, the most graphic of annalists Julius Cæsar, and the richest and sweetest of Epic and lyric poets, Virgil and Horace.

While however in architecture, which may be called a useful as well as an ornamental art, the practical Roman genius was entirely original in its creations, the painters and sculptors of note that appeared at Rome, seem, as their names indicate, to have been principally Grecian both in taste and in race. Pliny mentions three worthy of note; one in the last days of the Republic skilled in sculpturing lions and other savage beasts; another under Augustus noted for gaudy architectural decorations; and a third under Nero, even grand in colossal statues. The latter, Pliny relates, when he had distinguished himself by a colossal statue of Hercules made in the province of the Averni, now Auvergne, in Gaul, was called to Rome by Nero. At the instance of the tyrant he made a colossus 110 feet high, in the likeness of the prince; but it was afterwards dedicated to the sun in reproof of the vices of that prince. He also executed five other statues of clay, "which indicates," adds this critical historian, "that the art of casting had passed away; though in the science

[1] Horat. Epist. Lib. II., i. 157.

of modelling and carving, Zenodorus was inferior to no one of the ancients." It is a sad comment on the injustice which may be done to a genuine artist by despotic caprice and in a corrupt age. When this had culminated in Nero, art declined; to rise no more until a new and that distant era dawned.

CHAPTER IV.

MODERN SCULPTURE; PLASTIC ART AS AFFECTED BY CHRISTIAN CIVILIZATION.

THE more the intelligent student of ancient art contemplates its perfection, especially in the department of sculpture as it reached its climax among the Greeks, the more incomparable and peerless those early works seem to be. In fact to our ordinary apprehension the race that achieved such works seems to have been superhuman, and beyond the reach of imitation by men of modern times.

But here the fact meets us that though the plastic arts declined after the days of Phidias and his successors, until they seemed for centuries lost to the earth, they suddenly arose perfected again in the sculptors of Italy living before and after Michel Angelo. There must have been a chain of causes operating during all that long dark night; producing first the deepening gloom till its midnight was reached; and then again reproducing the dawn and the full noon-day that succeeded. The laws of intellectual development and of æsthetic tendencies operate as steadily, though as gradually, as do those of growth in the single tree and in the forest. The effort to reach and to trace the principles that have exercised an influence in the revival and in the irregular progress of the art of sculpture in modern times is difficult because of the meagerness of history: yet facts of value may be gathered to aid in tracing its infancy in the early ages of Christianity, till its rise to something like ancient splendor in Modern Italy; whence it spread into Spain and France or South-western Europe, into Germany and North-eastern Europe. and finally into England and America which are yet a virgin soil just receiving its first culture in art.

SECT. 1. THE TRANSITION PERIOD FROM ANCIENT TO MODERN SCULPTURE; ILLUSTRATED SPECIALLY IN THE CHANGE OF SUBJECTS FOR ART INTRODUCED BY CHRISTIANITY.

We have observed that the first and great subject of sculpture, in Egypt and Greece alike, was the embodiment of divine or superhuman beings. As the deities of the Greek were ideal men and women, eminent for some coveted quality of a physical, intellectual, or moral nature, so their sculptured statues, as human forms, were matchless in perfection. It was, of course, a great transition when the Grecian mythology ceased to win the popular confidence and even lost common respect; and when the statues of peerless gods and goddesses from being objects of religious veneration came to be relics of an idolatrous worship which was held as blasphemous.

We have observed how this form of art had its stages. As restricted to deified beings, it was bold and massive when the worshippers were rough and accustomed to measure greatness by massiveness; it became grand when Athens was rising to greatness; and beautiful when she had reached her growth and could advance only by chastening. As extended to men, it was athletic when heroes of physical development were the great of earth; it became historic when men great in intellect were exalted; it was impassioned when excited feeling was more attractive than calm intelligence; and it declined into the colossal when degeneracy could be made to seem grand only by exaggeration. The transition in the style of art is thus seen to be a gradual and connected progress, whether it be towards its rise or decline.

At first glance the occasion for this change may be sought in some outward circumstances affecting the artist; which circumstances, however, are an effect of a cause yet behind. Substantially human nature is the same in all lands and ages; men have the same sensual, intellectual, and emotional characteristics. True beauty must always be admired, and personal ambition must always prompt a desire to excel in the creation of some new style of art. External circumstances may cramp genius, or foster effeminacy; but the varying external circumstances of the Greek were in no degree the measure or cause of the varying art-spirit among their people at different eras.

That radical change can only be traced to a radical cause; and that fundamentally differing cause can only be found in the transformed religious opinions and emotions of that versatile people. No

external temptation to luxury alone could lure genius into the lap of indulgence; no greed of gold coming from princely patrons could give it stimulus, were there not beforehand in man's moral nature the spirit already formed to which the appeal could be made. It is mainly to the operation of moral and religious causes, that we must trace the varying taste and progress of men in science, literature, and art.

The spirit that prompts man to observe effects in nature, more strongly urges to a search for their causes; and science cannot begin its rule in a nation without turning men's thoughts first of all to theology. The consciousness of higher wants which dawning civilization awakens, leading to toil for physical, intellectual and moral amelioration, are outstripped by the more rapidly growing and refining thirst for a right spirit, and for a religion that is pure and undefiled before God. The intellectual search for truth as to the Divine Being, first in all the questionings of Socrates and the reasonings of Plato and Aristotle, is no less the leading theme of philosophic inquiry in every cultured nation and among all studious men. The student of art who overlooks this fundamental element in human nature, no less than the artist who should ignore it, must fail of his end; as truly as would the master-builder who should deny the law of gravity, and take no account of the crush and thrust of his material.

The change of subjects for sculpture, which the decline of the Greeks' respect for their ancient mythology necessarily produced, is one of the most important elements that wrought the transition from ancient to modern sculpture. As we have observed,[1] the religion of Christ was pecular in drawing men to the worship of one living and true God, a spirit that could not be represented, and to one being uniting the Divine and the human natures, whose form might be represented by art. As the marked change from ancient sculpture and painting is found in the substitution of this one perfect being for the many godlike forms of limited perfection conceived by the Greek artist, it is fitting that it should thus be the first subject considered under modern sculpture; since sculpture, as Winckelmann has intimated, is the art in which the peculiar spirit distinguishing the ancients from the moderns is most manifest. The consideration of this topic bridges over the chasm that separates the two worlds and ages, that before and that after Christ, one from the other

[1] Book I. Chap. vii. Sect. 6.

This one feature is the fundamental characteristic of the Transition Period between Ancient and Modern Sculpture.

Sect. 2. The chaste, though rude style of sculpture, prevalent in the early ages of Christianity.

It was to be expected, after the decline of Classical Sculpture under the Romans, especially when that reaction originated chiefly in the loss of popular confidence in the religious system of which these matchless works were embodiments, it was to be expected that this decline would be a great and a long protracted one. It was *not* to be expected that the new religion of Christ would at once develop the arts of civilization and general intellectual culture, as they were to be seen in the after days of its triumph. The struggle of art to rise from its deep depression must be gradual, even if the progress of Christianity were a steady and unbroken advance. The developement of Christ's kingdom, however, was to be like that of the plant; first the blade, then the stalk, then the ear, and finally the full corn in the ear. It was to grow like a tree, by stages; drought succeeding to shower, and winter to summer, now checking its growth, and now stripping it of green as if life had ceased. It was to be inferred from the teachings of Christ as to the slow and sometimes apparently retrograde movements of his truth and grace in its struggle with error and vice in the world, that the history of art would be a checkered one; its beauty often marred, if its life did not become wholly extinct. It is an error, however, to infer, that the Christian system was so simple, so aside from pomp, that it did not attract the truly cultured Greek. That very simplicity was its beauty; the charm that won, as by a spell, genuine genius and culture. Paul[1] says, indeed, "not many wise men *after the flesh*, not many mighty, not many noble, are called;" for these are often the men of perverted and low ambition, and often devoid of true taste. But the very cast of mind of its most ardent advocates, of such men as Paul, and Apollos, and Luke, and Justin, and Chrysostom, coupled with the fact that, in the second century of the Christian era, the renowned school of Alexandria was emptied of its pupils by the Christian school of Origen, because, like Paul and Apollos, they could not withstand the superior attractions of the religion of Christ, this is a sufficient testimony that genius and culture were drawn as to a genial home into the early Christian Church.

[1] 1 Cor. i. 26.

In tracing the history of art under the sway of Christianity, it is necessary to keep distinct those two very different ideas; the patronage of art *in itself considered* by early Christians, and their opposition to the ancient *use of works of art* as objects of religious adoration. It is satisfactory to be able to assure ourselves that the intelligent view of this distinction, so common in our day, prevailed in the earliest and purest days of Christianity.

It is evident from the allusions of Paul,[1] already referred to, that art itself, which addresses the ear and eye to give pleasure, is in perfect consonance with the harmonious moral culture expected in a Christian. The picture given by John the Apostle[2] of the worship of angels and saints in Heaven seems an equally clear intimation that art which addresses the ear, and by parity of reasoning that which addresses the eye, is not inconsistent with but necessary to the highest exercise of devotion; for truth, by whatever means presented to the human mind, is aided in its vividness by an appeal to the æsthetic emotions.

That works of art, both as ornaments and as embodiments of Christian sentiment addressed to the eye, were common while some of Christ's apostles were living, or in the age of the Apostolic Fathers, is manifest from the frequent allusions of the earliest Christian writers. Thus Irenæus, a disciple of Polycarp the disciple of John, who was an eminent missionary in Gaul about A. D. 175, states that the Carpocratians, a sect who held the human nature of Christ in special esteem, had both statues and pictures of Jesus.[3] During the early persecutions a false interpretation of Isaiah's mention,[4] "his visage was marred," he was "without form or comeliness," "there is in him no beauty," prompted by their own gloom, led Christians to picture their Master as careworn and dejected; while, among some, an objection was felt to the formation of any image of his person.[5] But this objection was temporary and limited, and did not lead to the rejection or restriction of really artistic representations of Christ; as is manifest from the statements of Eusebius, the Christian historian of the days of Constantine, who from personal observation and authentic records compiled the history of the Church during the first 300 years

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[1] 1 Cor. xiv. 7, and 2 Cor. iii. 18.

[2] Rev. xiv. 2; xv. 2, compare Rev. xxi. 21, 26.

[3] Irenæus contra Hæreses Lib. I. cap. 25.

[4] Isa. liii 2—4.

[5] Tertullian de carne Christi 9; Clemens Alex. Strom. II; Origen cont. Celsum VI.

of its existence. The prevailing idea of Christ was drawn from the pictures given of him by David and Solomon,[1] as excelling in beauty and majesty of form; Solomon describing special features, head, locks, eyes, cheeks, lips, hands, body and legs, as they would appear carved in ivory and gold. Eusebius[2] mentions that not only were images and pictures of Christ of great beauty and majesty numerous among Christians, but that lovers of art among the unchristianized Greeks and Romans had obtained statues of Jesus and his Apostles, and that they kept them in their houses as art treasures. He particularly describes a group of statuary executed at Paneas, or Cesarea Philippi, a town at the head waters of the Jordan, representing Jesus as healing the woman who had an issue of blood.[3] His incidental statements, copied from previous writers and derived from personal observation, show that from the first art was cherished by Christians, and that ideal representations of Christ's person are a natural demand of the human mind.

In the same early age, too, Christian devices and emblems were common; some of which certainly had great merit as conceptions of sentiment, however much they might be lacking in artistic grace of execution. Among these[4] were the emblems of Christ's salvation under the device of the ship, or Ark of Noah;[5] that of the Holy Spirit's descent as on Christ in the form of a dove;[6] that of devotional worship under the image of the lyre or harp;[7] and that of the three Christian graces, faith, hope and charity under the figures of the cross, the anchor, and the heart.[8] These devices were cut in relief on pitchers or other utensils; they were inscribed on the sarcophagi and funeral monuments of the dead; and they were carved of ivory, pearl or other material, and used as ornaments for the parlor or the person. Tertullian[9] also mentions small embossed carvings of events in Christ's life, such as the lost sheep brought back by Christ on his shoulder, which were stitched by pious mothers on the caps worn by their boys; the propriety and requirement of which seemed to be found in such expressions as those of the Revelation of John which relate to the "white stone, and in the stone a new name

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[1] Psalm xlv. 2, 3; and Song of Sol. v. 10—16.

[2] Euseb. Hist. Eccles. lib. vii. cap. 18.

[3] Matt. ix. 20—22.

[4] See Clemens Alex. Pædog. III.

[5] Heb. xi. 7, and 1 Pet. iii. 20.

[6] Matt. iii. 16.

[7] Psalm xxxiii. 2, etc.; Rev. v. 8; xiv. 2; xv. 2.

[8] 1 Cor. xiii. 13; compare Matt. x. 38; Heb. vi. 19, and 2 Cor. iii. 3, with 1 Pet. iii. 4.

[9] Tertul. de Pudicitia cap. vii.

written," and the "name of the Lamb in the forehead."[1] Among these devices the cross became naturally the earliest, as it is the most common and permanent as also the most distinctive and significant. The spirit of the Crusades only revived an early emblem when taking literally Christ's words[2] as rendered in the Latin Vulgate and as thundered through the hills and valleys of Southern Europe by Peter the Hermit, "Qui non accipit crucem suam, et sequitur me, non est me dignus," it suggested as its badge a cross of red cloth sewed upon the left breast. A similar prompting of the art spirit common to man has kept alive the emblem, making now the "cruciform finial" the chosen terminating finish for Church spires among Christians of every sect. That it was a late period when Christian emblems and sculptured forms became objects of worship is intimated by heathen observers of the early Christians. Pliny, in a letter to Trajan, written when none could be found who had been Christians "more than twenty years," after describing the simple worship of the Christians states as to those who recanted, "All venerated thy image and the statues of the gods;" and at a later period Celsus the philosophic opposer of the new religion charges against Christians that "they refused to rear altars, images, and temples."[3] The period when works of art began to be abused is indicated in one of the canons established by the council of the Western and African Churches held in the Third Century at Illiberis, a town at the foot of the Eastern Pyrenees on the border of France next to Spain, in which it was decreed, "that pictures ought not to be introduced into the Churches lest that be worshipped and adored which is painted on the walls."[4]

It is instructive to observe that the spirit of true art grew with the growth of early Christianity, and that artists of eminence were called forth by the general spirit of culture which prevailed around. As the age of Phidias was the age of Plato, of Demosthenes, and of Sophocles, so the era when those artists arose who gave true beauty and artistic taste to the early churches of Palestine, erected through the influence of Helena the mother of Constantine, was the age of such men as Chrysostom, the Demosthenes of the Grecian pulpit, and of Gregory of Nyssa, the Xenophon of the Greek Church. It is most important to the interests of Christian truth to note, that it was a generation later, when the effects of this development in Chris-

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[1] Rev. ii. 17; xxii. 4. [2] Matt. x. 38. [3] Origen contra Celsum VIII.
[4] Canon Illiberitanum 36; quoted Gieseler Ch. Hist. Vol. 1. sect. 70 note 5.

tian art had been matured in execution and tested in its religious effect that the devout Augustine gave the testimony already cited.[1] It was the charm which the cultured minds and chastened imaginations of such men threw around the person and the doctrine of Christ that inspired the artists of the Church at that day.

Sect. 3. The artificial Style and illegitimate use of Sculpture characterizing the Mediæval ages of the Christian Church.

A darker era for art, as well as science and general culture drew on, when, two or three centuries after Constantine, the Roman Empire and with it the Christian church, became divided between the East and the West. Gradually pictures and images came to be made aids to devotion in the grosser sense; and those results which had been seen in other ages, and under systems of religion widely different from Christianity soon showed themselves.

The first effect was seen upon art itself. As already observed in Egypt, and to a certain extent in primitive Greece, the necessary consequence of making images an object of religious adoration was the fixing of an artificial style as the orthodox pattern after which all copies should be modeled. The great cause of this degradation of art, as of all the corruptions from that time prevailing in the Church, was the same with that which in all history has sapped the foundations of Empires and Hierarchies. It had come to be popular to be a Christian; worldly men pressed into the Church to gain positions of influence and emolument; men without piety, and of course, without integrity of mind or heart, out-voted, or out-managed the lovers of the truth, beauty, and glory of the Christian system; and men without principle, and therefore without true genius, which always scorns anything low, got control of the decorations of Churches as the tools of the degenerate men who held its offices. The effect was to degrade art; and to make it less and less respectable to be an artist. The wretched caricatures of madonnas and crucifixes still seen in the small shrines erected at the corners of high-roads throughout Italy, Spain, and even France, as well as the often hideous figures seen at Church door-ways and altars, as witnessed in the old cathedral of "Notre Dame," at Paris, are relics of this degeneracy of art.

A second and most unfavorable result, was the corruption of religion itself which image worship introduced. As already intimated,

[1] Book I. Chap. vii. Sect. 6.

our æsthetic sense and sensibility, our powers of judging of and being moved by the beautiful, the grand and sublime, was manifestly given like all our other faculties and susceptibilities by our Creator, in order not simply to furnish us delight, but to lead us to the true and the good. No end of life, no employ of our powers of mind can be so exalted as their exercise in the worship and service of God. Art, therefore, *must* have as its highest end to aid our devotion. But in the history of Christianity the same truth taught in the palmiest days of Greece, as well as in every age and land, was realized. The effort to raise our higher nature through intermediate instruments of a lower nature, the idea of elevating the soul of man to loftier spiritual conceptions by means of material agencies, is a contradiction in logic; and it must lead to a result the contrary of that attempted. Since by nature, instead of being pure and spiritual in the tendency of our souls, we tend to the gross and sensual, the effort to approach the Divine Spirit through a material medium leads to a constant and reactionary degeneracy; first of the tone of mind in the worshipper, and then of the image he adores. The increasing corruption, therefore, of art just noticed must be but the reflex of an increasing degeneracy in spirituality among Christians. This necessary influence it should again most carefully be observed, is in perfect harmony with the counter principle that when true spiritual devotion is the sentiment that is *leading*, and not *to be led*, the influence of art is designed by our Creator to be an aid to that spiritual effort of the mind. Art is the handmaid of religion; but it cannot be made its master or author. When this distinction became neglected, the Churches began to be filled with statuary and paintings which were by the people perverted from their office as works of art; and though intelligent and spiritually minded-Churchmen with tongue and pen urged the true use of sacred art, yet the tendency was still downward. Art was sacrificed; for religion could not be, by true men. The farther history of the controversy on this subject in the early Church belongs rather to painting than to sculpture.

One result of this struggle of good men to save both art and spiritual Christianity at the same time, was seen in one of the topics controverted by the Eastern and Western Churches at their separation. The Eastern Church, founding their objection upon the second command of the Decalogue, rejected *carved images* representing Jesus, or any person deemed sacred; yet they retained and favored the decoration of Churches with paintings of the Saints and of the

Virgin mother and her child. The propriety of this distinction was, of course, questionable; while it led in the Eastern Church to a double influence which was unfavorable for art. It excluded sculpture entirely from the field of the artist, and that in that very land where Classic art had reached its perfection; while at the same time it made painting to sink into a state of degeneracy from which it has never yet risen. This withering blight is seen in the lifeless, meaningless painted objects that hang upon the walls of Churches in modern Greece, the ancient home of the Muse of sculpture and painting; which worse than inanimate and senseless pictures receive from state and military officials, as they kneel and kiss each saint, a show of reverence such as is not seen even in Roman Churches. Even crucifixes were banished from the Eastern Christian's shrine. The only relics of sculpture lingering in the field of Christian art in the Oriental Church, are rude anaglyphs, or carvings in low relief on chalices and sarcophagi.

Sect. 4. The Majestic Grandeur to which Sculpture arose at the Revival of Science, of Letters, of Art, and of Religion in the fifteenth century.

It was not strange that the age of Wickliffe and Thomas a Kempis, of Luther and Loyola, of Dante and Chaucer, of Copernicus and Columbus, should fall so near that of Lionardo da Vinci, and of Michel Angelo, that these men eminent in spheres so different may be said to have been formed and developed by the same influences. Religion, Science, Letters, and Art, all flourish together; and the same country, at the same age, will produce a galaxy like Dante, Columbus, and Lionardo, not only because they are kindred plants naturally fed from the same soil, but because like forest trees they stimulate each other's growth.

Here, again, as in Greece, the graduated steps by which the advance of art is attained is most marked; since it required at least two centuries and a half from the first reviving of art to bring forth the sculptor in whom that branch seemed to be perfected. It was in the beginning of the thirteenth century that the return to the pure and ancient taste began; and it was at the close of the sixteenth century that it reached its climax of perfection.

In the octagonal building called the Baptistery in the rear of the Cathedral of Pisa, stands a large octagonal font about four feet high and five or six in diameter, with a pulpit in the rear executed in marble with fine bas-reliefs representing Scripture incidents. It is

the work of Nicolo Pisano, who, about A. D. 1250, had the genius and daring to rise above the taste and bigotry of his times, and, taking nature as his model, to frame Sculpture of sacred personages with the beauty and life belonging to real men of differing characters. His son Giovanni, or John, partook his father's spirit; and the heart of ancient Etruria, or Tuscany, became a second time the cradle for the infancy of a new or revived taste in art. The churches not only of Pisa, but of the whole surrounding region, now contain relics of the improved sculpture thus introduced; among which, one of the finest specimens is the altar in the chapel of St. Michael, at Florence, by Orcagna; a disciple of the school of Pisano.

The tourist in Italy finds his attention arrested by the three bronze doors of the Baptistery in the rear of the Cathedral at Florence. When yet a youth, Michel Angelo, destined to be the Phidias of Modern Italy, used to stand and gaze upon these doors, and to exclaim that they were "degne d'essere le porte di Paradiso," worthy to be the gates of Paradise. Two of these were the work of Lorenzo Ghiberti, who lived at the opening of the fifteenth century, or about one hundred and fifty years after Pisano; and who occupied, therefore, the middle period in the growth of that art taste which culminated in the days of the Medici. Ghiberti and Donatello were leading spirits in this age; their themes were still Italian-like incidents in the lives of patriarchs and prophets, and of Jesus and his apostles; executed, however, not after the old cramped and inexpressive pattern, but with the life of the best Grecian sculptures.

The visitor to the S. Pietro in Vincoli, at Rome, however stolid his mind, or impassive his sensibilities, is held spell-bound before the majestic and impassioned statue of Moses. Hervey[1] says of it, "For effect, the world has nothing like it." It was made for the chapel and tomb of Pope Julian II. a work never completed. It is the masterpiece of Michel Angelo as a sculptor; in whom the perfect sublime belonging to themes of the Old Testament Law, seems to have been more fully reached than by any other artist of ancient or modern times. He combined in himself in the highest eminence the character of sculptor, architect and painter; and in his masterpieces in each of these departments, the boldness amounting to positive daring which is an essential element of the sublime in character and in works, is strikingly exhibited. Hervey has said of his three great works: "His Moses inflames, his dome of St. Peter's awes, and his

[1] Illustrations of Modern Sculpture, T. K. Hervey, London. 1834

Last Judgment startles." Michel Angelo's Moses has been both compared and contrasted with the Jupiter of Phidias. The artist and this work are worthy of the *comparison;* for like Phidias, Michel Angelo reached the height of artistic success in the religious system of which he sought to make his ideal an embodiment; that of Phidias being the majesty of the supreme among the Grecian hero-deities, and that of Michel Angelo being the glory that shone in the face of the first great law-giver of the unseen God as he came from the terrors of Sinai radiant with a light so dazzling that the people could not look thereon. It is to be *contrasted* with the work of Phidias, because it is as wide a departure from the classic standard of art as the God of Moses is from the deities of Hesiod. In this work of Angelo, the sublime belonging to the Old Testament as the forerunner of the New Testament reached its climax. It is in painting, rather than in sculpture, that the sublime of the New Testament history has been attempted and attained.

Sect. 5. The embodiment of Christian Sentiment in forms of classic grace, characterizing modern sculpture in Southern Europe.

Michel Angelo was the grand representative, not of perfected Italian sculpture, but of the revival of art in general, and the special master of the sublime in Christian themes. Long before his time the peculiar character of Tuscan genius had displayed itself; so like that of the ancient Greeks who had settled in central Italy, and who were the lineal ancestry of the great artists of Modern Italy. The characteristic of perfected Italian sculpture, as also of the best school of modern architecture, was this; it caught the spirit of beauty and grace conceived by the ancient Greeks, and made it conspire to express the sentiment and thus to promote the devotion and advance the civilization, belonging to the Christian faith. An exhaustive analysis might reveal in the progress of this art in Modern Italy substantially the same steps beheld in Ancient Greece from the rude to the bold, the grand, the graceful, the historic and the impassioned.

In the middle of the Fourteenth Century, 75 years after Pisano lived, and 150 years before M. Angelo, in marked resemblance to the progress of art in Greece, the first school of design, modelled after those of ancient Greece, was introduced into Tuscany. A century later this school reached its climax of success; and two main causes conspired with the already awakened spirit of art to give it a thoroughly classical cast.

In the year A. D. 1453, Constantinople, the centre to which had clustered the little remains of true Grecian taste that had survived centuries of decline, was taken by the Turks. The few genuine descendants of an unbroken succession possessing the art spirit of ancient days, a spirit that will always like that of true religion have its "elect remnant," being driven from their home, sought the land of Western culture. Arrived in Italy no spot so invited them as the old colonial heritage of Etruria. The revival of art had here raised up a noble and truly princely line of patrons, in the long succession of Grand Dukes of Tuscany, who admired ancient art and cherished every effort for its restoration. The mingling of these fugitive Greeks among the native artists of this region of Italy served to give a more decided tendency to the classic taste already awakened.

Not long after this, while these fugitives were yet living, and partly it is probable through their influence, the relics of the statues of Grecian gods and heroes thrown down and buried beneath the ruins of their temples in ancient Rome by the Christian zealots of the days of Theodosius, were dug up from their graves. How completely these masterpieces of classic sculpture had been made to disappear is manifest from a list prepared by Pope Eugenius IV., A. D. 1430, of the then preserved Grecian statues; in which only five are enumerated as entire. From about A. D. 1480 to 1506, in which latter year the group of Laocoon was exhumed, a large number were rescued; most of which were deposited in the Vatican and Farnese Palaces of Rome, and in the halls of the Medici or Grand Ducal family at Florence. The study of these ancient models, and the ambition to restore the parts of them that were lost, gave a permanent Grecian cast to Italian taste in sculpture.

A yet more decided influence came from the independent, the almost ultramontane freedom of religious sentiment and practice that had always maintained at Milan and in other Northern cities and sections of Italy. Flaxman has with force drawn attention to the fact that the family of the Grand Dukes of Tuscany had a club organized for the study of Plato and the discussion of the doctrines of that philosopher, who was both made by and the maker of Grecian sculptors. By this club, which grew into a society devoted to the re-publishing of the Greek classics and to the revival of that early Christian philosophy which sought to reconcile the Platonic doctrines with the teachings of the New Testament, the art-spirit of the age was directed. It was natural that the philosophy which gave shape to the conceptions of Phidias should also give a turn to the

ideals of the sculptors who grew up under the influence of the school of the Medici.

The artists who began this work of classical reform were most of them not great masters in art. The men who were entrusted with the repairing and restoration of mutilated antiques already referred to, Bellini who carved the arms of the mutilated Venus, Montorsoli who repaired the Apollo Belvidere, Bandinelli who re-cast the right arm of the Laocoon, and Guglielmo della Porta that of the Farnese Hercules, were not artists of the higher order of genius. The improved schools of Northern Italy did not reach Southern Italy and its centre Naples, whose style was a profuse ornament. A corrupt Neapolitan taste grew to maturity under Bernini; who, forgetful of the principle that the sculptor's chisel, employed upon hard material and that of one color, cannot present the nice tracery and the minute shading to which the painter's brush is alone adequate, conceived the unartistic idea of carrying the ornamented style of Corregio's painting into sculpture. The Florentine School, too, when the line of its noble patrons became degenerate, lingered to a close near the end of the Seventeenth Century. In the Eighteenth Century, however, new awakening causes started the drooping spirit of true art from its brief slumber; that renewed taste taking its character from the classic Greek, and finding its subjects in spiritual Christianity. The opening of the treasures of art hid beneath the ashes of Pompeii, first discovered in 1748, revived the before kindled interest; while the appearance of the masterly treatise on ancient sculpture by Winckelmann, who attracted by the new discoveries left Germany and spent his life in Italy, fanned to a flame the enthusiasm for classic sculpture, till all Italy, Europe, and even America were attracted by it. The numerous, and sometimes obscure Churches and palaces of the cities of Italy rejoice in perfect gems of sculpture, classic in grace and Christian in theme, the offspring of this revived taste; treasures which no foreign gold can bribe their appreciating possessors to part with; shrines to which the tourist in Italy, led by true love for art, will find himself drawn as by the spell of a rare devotion. The three veiled statues, Modesty, Vice and the Dead Christ, in the retired Church of Santa Maria della Pieta, lost among the 300 more attractive sacred edifices of that city, more than realize this characteristic of the taste of that age.

Prominent in this new era was Canova. Born at Possagno, in Austrian or Venetian Italy, A. D. 1757, the son of a stone-cutter, in the ninth year of his age he carved two small shrines in Carrara

marble, displaying such genius that an artist secured him a place as pupil in the studio of a sculptor at Venice. At seventeen, he had executed his statues of Orpheus and Eurydice; which were soon followed by those of Dædalus and Icarus. Having visited Rome, Naples, and the new collections from Pompeii, he established his studio at Venice, and brought out his Apollo and Theseus, whose reputation overwhelmed him with orders from crowned heads. During the French Revolution of 1798 he visited Germany, and in 1802 Napoleon invited him to Paris, where he modelled a statue of the Emperor. The spirit of the French Court interfering with his devotion to art, he returned to his native town, where he remained till his death in 1822.

Canova's works group themselves under those three classes which characterize the sculpture of native and foreign students of art in Modern Italy. They are first, classic themes, the promptings of the æsthetic cravings of artists; second, religious studies, the suggestion of higher aspirings after moral excellence; and third, historical or private subjects, as busts and statues of men of renown, or of wealth, undertaken from the necessities of livelihood. The capitols of Austria and France have numerous memorials of the latter class from Canova's chisel; the Churches of Italy abound in the second; and the collections of amateurs in almost every country in Europe have relics of the first class of his works. This threefold direction of his genius manifested itself in his last days; when he planned the beautiful little Church after the order of the Parthenon for his native village, and executed a series of bas-reliefs designed to illustrate the life of Socrates, together with a group of Mars and Venus; when, again, he conceived and completed his exquisite Piety, his St. John, and reclining Magdalene; and when yet again he modeled and carved the colossal sitting statue of Washington for the Capitol of North Carolina at Raleigh.

It seems to be the ordering of Providence that genius of the highest order should be rare, and add glory to but an occasional age. Such works as the beautiful equestrian statue in bronze of Louis XIV., by Bosio, standing in the Place des Victoires, at Paris, and others of similar merit executed by Italian artists in the early part of the present century, hint the counter truth that genius itself must have a congenial field for development, and that even ordinary capacity rises to excellence when nurtured amid associations promotive of general culture. The statues of Peace and War, by Persico, at the American Capital, are testimonials to the fact that to carve

in marble is for the Italian a natural mechanical pursuit; and as among the thousands of workmen in an English or American factory, some will develop great inventive skill, so among the thousands of common chippers, carvers and polishers of Italian birth, employed on great public works in almost every country, it is only here and there that a true artist will be called out. Everywhere and universally, however, the spirit of Italian sculpture is moulded to the classic type.

SECT. 6. THE UNION OF SIMPLICITY IN DESIGN, NATURAL BEAUTY OF FORM, AND LIVELINESS OF EXPRESSION DISTINGUISHING SCULPTURE IN NORTHERN EUROPE.

Though the spread of a cultured taste for the art of sculpture has generally had its rise in the countries of Northern Europe from the visits of Italian artists, and though the artists of every clime have flocked to Italy as the school for study, yet the age of culture has everywhere been preceded by a rude native genius which the classic influence of Southern Europe could only refine, but never shape.

Even Spain, the natural neighbor of Italy, in location, language and ecclesiastical predilections, had a native art taste of its own which Italian refinement only modified; a fact more apparent, indeed, in the History of Painting, yet traceable even in Sculpture. The long residence and the real cultivation of the Moors in Spain first stamped its impress of mingled glitter and true magnificence on the artists of Castile and Aragon. Afterward the fame of St. Peter's and of Michael Angelo drew Paul de Cespides from Spain to Rome; and in him sculpture rose in that land of grand ideas to something like dignity. Since that era, however, Spain has been behind almost all other portions of Europe in this department of art.

In France there were sculptors of ability before the age of Da Vinci. The "Fountain of the Innocents," at Paris, executed in the sixteenth century by Jean Gougon, as also the works of Jacques d'Angouleme in the same age, show but a partial chastening from the early Florentine culture upon an artist of true genius impatient of discipline. The Caryatides of the Louvre, by Sarrasin at a later day, are a worthy imitation of those graceful figures which adorned the Parthenon; though they are French, not Grecian. In the brilliant era of Louis XIV., Girardon and Puget gave that yet more marked native type to French sculpture, which won for it the title "La Belle." Yet later, Falconet gained even a foreign reputation;

being selected to execute a bronze statue of Peter the Great, in Russia.

The true genius of French sculpture, however, appeared in Houdon. This great artist was born in 1741, at Versailles, near Paris. The work of Winckelmann on Sculpture gave direction to his early aspirations; and in youth he took the first prize for Sculpture at the Royal Academy. Going to Italy after a brief visit to the unburied cities of Herculaneum and Pompeii, he spent ten years at Rome; during which time he executed his famous statue of St. Bruno, of which Pope Clement XIV. said, "It would *speak* did not the rule of his order enjoin silence." Returning to Paris, during the supremacy of the Revolution, he executed busts and statues of Rousseau, Diderot, D'Alembert, Turgot, Mirabeau, and Voltaire. At the invitation of Benjamin Franklin, then at Paris, whose bust he executed, he visited America in 1785, and during two weeks spent at Mount Vernon, took the casts for that statue of Washington which, when executed, Lafayette declared to be the best likeness obtained of the American patriot; and which, at this day, is the central ornament of the State Capitol at Richmond in Virginia. Returning to France, imperial in place of Republican subjects demanded his skill in the persons of Napoleon and Josephine. He lived till 1828; dying at the age of eighty-seven years, having passed through national vicissitudes such as few mortals meet; verifying, in his quiet devotion to art, how happy and successful the man of highest ambition may be, while all the world is in tremor and peril around him. One of his last works, a labor of love in hours saved from less noble toil, was his Cicero; now standing as a monitor to the Senators of France in the palace of the Luxembourg.

In Germany the Revival of Spiritual Religion was followed amid the general impulse given to intellectual inquiry by a genuine taste in painting and sculpture. As early as the Sixteenth Century, a genius for this latter art had displayed itself in an independent native vigor of conception, chastened afterwards by culture to classic elegance, and devoting itself generally from the necessity of the artist either to subjects of local interest or to religious themes. Hervey has characterized German sculpture as "excelling in funereal monuments." As early as the Sixteenth Century, Peter Vischer had, by his group of the Twelve Apostles at Nuremburg, given Bavaria the honor of being leader among the German states in sculpture. Though this art has lingered behind her sister, Painting, in Germany, yet in the works of Schlüter, Schadow, Dannecker, Rauch, and others,

themes of classic and Christian, of national and individual interest have been ennobled in sculpture.

In the neighboring states of Denmark and Belgium, sculpture has been pre-eminently a master-study. The name of Thorwaldsen, born at Copenhagen 1772, is a monument to Danish genius. His father, an Iceland stone-cutter, perceiving his son's talent, placed him early at a school of design. The Royal Academy of Copenhagen, seeing his promise, sent him at their expense for five years to Rome; where his life has been spent. His early works were his Jason, Achilles, Mars, Adonis, Hebe, and other classic subjects; and the patronage of two English gentlemen, one of whom ordered his Jason when in plaster to be cut in marble, while another afterwards bought his Hebe, was the foundation of his pecuniary independence. Afterwards, until he could refuse them, he executed many busts and statues of living personages. His later and more favorite studies have been Christian themes; a St. John, and Christ and his Apostles for the Cathedral Church of Copenhagen; Church and altar decorations, and funereal monuments in relief and in full statues; embodiments of sentiment, of which his Day and Night are gems everywhere popular; while even a candelabra, modelled after the description left by Pausanias of that found in the temple of Jupiter at Athens, has invited his fertile and comprehensive genius. The style of Thorwaldsen is bolder and more full of passion and of majesty than that of Canova; his life-long Roman culture moulding, but not giving original shape to the peculiar type of the sculpture of Northern Europe, as eclectic in culture though independent in themes.

In the two brothers, William and Joseph Geef, the former born at Antwerp, Belgium, in 1806, sculpture has found recent and noble representatives to honor that country. The "Faithful Messenger" of Joseph first called public attention to the works of these brothers. "The Melancholy," the "Prayer," and the "Lion in Love," of William Geef, the latter work first exhibited at the London Exhibition of 1851, are fine examples of the permanent union of the Christian and classic ideals which seem to be natural suggestions to the mind of young artists in the north of Europe.

Sect. 7. The Scope of Subject and Vigor of Conception seen in the early growth of English and American Sculpture.

England has been behind Continental Europe in producing eminent artists; and America, her daughter, has with more reason been

behind even the mother land; though as a nation the earliest to develope art taste. In England, the main cause of this neglect has been the wide extent of her domain, which has invited so strongly her young men of genius to positions of wealth and power; while in America the same cause has had even greater occasion for control. The natural life of the people of England, so like to that of the Romans, has made her, like her prototype, a collector, it might almost be said a plunderer, rather than an originator and executer of works of art in painting and sculpture. Literature speaks to the mind in only one tongue selected from many; and every cultured nation must therefore have writers in their own native language: but art has the "gift of tongues;" and a Greek statue may address the people of Rome or London as intelligibly as an Athenian audience. It was in the time of Charles the First, about A. D. 1620, that the Earl of Arundel brought from Greece those exquisite bas-reliefs, pried out from under the cornices of Grecian temples, and those matchless fragments of ancient statues, which yet adorn the British Museum. Nearly two centuries later, from 1799 to 1812, while Lord Elgin represented England at Constantinople, the Elgin marbles were in like manner gathered; such a collection as the free Greeks of this day will never again allow to be taken from their shores.

The early sculptures now found in the English Churches are not by native artists; for neither the Britons, Saxons, or Normans, had leisure to turn artists. After the Crusades, art was more cultivated in England; but in the person of Italian artists. During the reign of Edward III. the rich ornaments and monuments of York and Gloucester Cathedrals were executed; but not by English sculptors. From the reign of Henry VIII. the spirit of the Reformation for a time yielded to the fallacy of Iconoclasm, and art was neglected; but, as always in the history of Christianity, it was a fanaticism of short duration, succeeded by a speedy return to the just appreciation and approbation of the works of art.

In the Eighteenth Century, native sculptors appeared in the persons of Banks, Wilton and Bacon. Born A. D. 1735, Thomas Banks by his early success as a pupil of the London Royal Academy won the selection as the Academy beneficiary to Italy. His "Caractacus pleading before Claudius at Rome," early executed, and his "Psyche and the Butterfly," won him a European reputation. The present century has been as fruitful as the past was barren in the growth of genius for art in England. In this extended devotion, especially to sculpture, Flaxman has led the way. Born at York, in 1755, at the

age of fifteen years, he entered the Royal Academy, and at twenty-seven went to Italy. Classic themes and the classic style as presented in outlines upon ancient vases, became his favorite study; and during seven years spent at Rome he executed his "Illustrations of Homer." Drawn from the best models of the ancients they have been admired for their spirit in every country of Europe. These classic subjects of his early study however were only executed in drawings and plaster casts; they were too ideal and extended to be put in marble. Richard Westmacott, born in 1774, the son of a sculptor, who sent him to Rome in his eighteenth year, developed an early taste for ideal creations, which impoverish the purse, though they enrich the genius of the artist. Westmacott's "Psyche opening the casket of Beauty," and his "Euphrosyne," one of the Graces, are beautiful conceptions of ideal art. His later labor was devoted almost entirely to statues of eminent men; among which his Addison was his first, and his George III. his most complimentary. Francis Chantrey, born in 1782, having from boyhood shown a fondness for modelling in clay, deserted his law studies at Sheffield, when he chanced one day to enter the shop of Ramsay a sculptor. At twenty years of age, he made himself famous by a bust of Horne Tooke, which indicated original genius in giving life and force of expression to marble. His works of statuary and monumental design are found everywhere in London; and his statue of Washington in the State House at Boston is prized by Americans.

Wales claims renown in the progress of English Sculpture. John Gibson, born at Conway, in 1791, apprenticed to a wood carver, showed genius which led William Roscoe and Lord Brougham to aid in sending him to Rome. A pupil, first of Canova, then of Thorwaldsen, his studies became chiefly classic, and his works ideals of ancient mythology, as well as statues of the living. Among the latter are statues of Queen Victoria, Robert Peel, and others; and among the former are "Psyche borne by Zephyrs," "Mars and Cupid," "Hero and Leander," "Aurora," "Hebe," "Sappho," and "Venus," and a gem of sentiment, the "Sleeping Shepherd." Independent in spirit Gibson has ventured on the hazardous attempt of Praxiteles to add tint to marble; his "Victoria" and "Aurora" being slightly tinged, and his "Venus" completely colored, flesh, hair, and drapery. He is a leading spirit among many able contemporary English sculptors; such as Bell, Bacon, Bailey, Carew, Manning, Marshall, Spence, Wyatt, and others; Ireland also being represented by Foley.

The rise of native American sculptors, though recent, is yet com-

paratively early; appearing as they have in the infancy of the nation, and rapidly advancing to special eminence and excellence. That early rise is admirably presented by Francis Hopkinson, of New Jersey, one of the signers of the Declaration of American Independence, the racy and trenchant satirist of his times; who records that "there came to this country in 1783 immediately at the return of Peace, a certain Robert Edge Pine, parading the title 'Painter to His Majesty,' and cherishing the intent to paint the portraits of the 'Heroes of the American War.'" Said Pine, the painter, brought along with him a plaster cast of the Venus di Medici; "but," says Hopkinson, "he kept it very privately, as the manners of the times would not permit the exhibition of such a figure. And yet the celebrated women of that day exposed their persons in such a manner, as to shock even French modistes; the fashion of the open-necked dresses of the dissolute Court of Charles the Second being in vogue in London, New York, and Philadelphia, at that period."

While such was the lack of Art taste in the more Northerly States, where Puritan, Dutch and Quaker influence prevailed, on the marble mantel jambs of many a descendant of the aristocratic cavaliers settled in Virginia and South Carolina were found reliefs of classic subjects carved by Italian artists in England. The birth of the new nation, however, was immediately and in all sections of the country succeeded by an ambition for sculpture in its higher forms. There were men whom their countrymen could not willingly allow to pass from memory. The features of one, the Father of his Country, every Revolutionary soldier and every American wished to have in personal possession. Franklin's invitation to Houdon was the impulse of a universal aspiration. The statue of Washington in the capitol of Virginia, at Richmond, by Houdon, the French sculptor, that in the capitol of North Carolina, Raleigh, by Canova the Italian sculptor, and that in the capitol of Massachusetts, at Boston, by Chantrey, the English sculptor, are at once evidence of a universally awakened popular demand for statuary, and of the fact that no American sculptor of ability had arisen; while that in the Hall of Independence, at Philadelphia, the work of William Rush, carved in 1812, is a monument of the aspiration for native art awakened by the new national life.

It was not till about 1830 or 1840 that works of sculpture began to appear which proved that ere long a rich harvest in this department of art was to be the growth of American soil. The

Gallery of American statuary now contains a worthy list of honored names, all of whom have flourished, and most of whom have been born within the last half century. Among these, Greenough, Clevenger, Crawford, among the dead, and among the living, Powers, Brown, Mills, Palmer, Stone, Rogers, Barbee, Hosmer, and others have adorned their country.

The name of Horatio Greenough stands first in time, as well as eminent in merit, among American sculptors; his "Chanting Cherubs," executed in 1828, being the first group in marble from the chisel of an American artist. Born at Boston in 1805, at the age of sixteen he had attained, under the instruction of a French sculptor, proficiency in modeling. Encouraged by Allston, the painter, he left College for Rome at the age of twenty years; where he made the acquaintance of Thorwaldsen. Revisiting at intervals his native land, he established his studio permanently in Italy, at Florence. "His Chanting Cherubs" introduced him to the public; and soon he had numerous calls for busts. His first commission from the United States Government was the colossal Washington for the United States Capitol, which was finished in 1843. During the process of chiseling this great work, he executed his "Medora," his "Venus Victrix," and his "Angel Abdiel." His second commission from the United States Government, his "Rescue," or the Western Hunter grappling with an Indian, was finished in 1851. Greenough's cast of mind was bold and impulsive; chastened and humanized by a genial urbanity and generous sympathy. The criticism of his Washington, relating solely to the drapery, and turning on these two nice questions, first, whether the true ideal of art in drapery is not to give a national costume and whether the Grecian sculptor chose the flowing toga for its own ease and grace or as the national garb, and second, whether the nude of the Grecian statuary seen in the Hercules of Dædalus, but not in the Jove of Phidias, justified nudity in an apotheosis of the American patriot-general, seems to have worn upon his sensitive and generous nature, and to have hastened his death in 1851. The head of Greenough's Washington is incomparably sublime; and in itself will make the artist ever live in the hearts of his countrymen, and in the appreciation of generous critics. His "Venus," too, is of the sweetest loveliness; and the genius that could excel in such opposite styles, uniting the boldness of Phidias and the grace of Praxiteles, will shine as a rare one in the history of American sculpture.

Shobel Vail Clevenger, born at Middleton, Ohio, in 1812, was

reared a stone-cutter. An angel, which he carved on a tombstone, having attracted attention at Cincinnati, he went to Boston, and, after some private instruction, executed busts of Webster, Clay, and other eminent men. Visiting Italy, he continued his labors in the same class of sculpture. He died at sea on his way home in his thirty-first year; leaving behind the pledges of great future eminence, had his life been spared.

Thomas Crawford, noted for laboriousness as well as ability, born at New York, in 1814, from the time he could hold a pencil, devoted every leisure moment to drawing. At fourteen, his father allowed him to enter the shop of a wood-carver; at nineteen he commenced executing monumental marble; entering also, a School of Design. At twenty-one, with scanty means, going to Rome, he became a pupil of Thorwaldsen. For several years he toiled incessantly without awakening special notice; when his model of "Orpheus" drew forth the encomiums of both Thorwaldsen and of Gibson, and a copy of it was in consequence ordered for the Boston Athæneum. He now devoted himself for some years to classic themes for higher improvement, and to busts to replenish his purse. In 1849, on a visit to America, he obtained from the state of Virginia a commission for the equestrian statue of Washington, now at Richmond; which, with the group on the pedestal, forms the most elaborate composition in bronze in America. Crawford died in 1857, at the age of forty-three years, from an over-taxing of his energies. His works in statuary and busts, in classic, Christian and sentimental themes, excite surprise at their general merit, as well as their number. His grandest studies were his models for the group in the tympanum of the northeast portico of the United States Capitol, and for the colossal Liberty at the apex of the dome; works which have been executed by other hands since his death.

Hiram Powers, born in Woodstock, Vermont, in 1805, but removed early in life to Ohio, having made the acquaintance in youth of a German sculptor at Cincinnati, conceived a love for the art. Having acquired some skill in modelling in clay after spending seven years, from twenty-three to thirty years of age, as a Curator of a Museum, he came to Washington City in 1835, and gained reputation for his busts. Two years later, through the liberality of Mr. Longworth of Cincinnati he was enabled to visit Italy. One year after, in 1838, he modelled his Eve; which drew encomiums from Thorwaldsen. In 1839, he modelled his Greek Slave; of which he has made not less than four copies. Other subjects of sentiment fol-

lowed; when, as usually occurs, the demands of men of wealth, that could not be denied, led him from the flowery fields of the ideal into the dusty highway of the lucrative. His busts of private individuals and statues of eminent men adorn many a public hall and private gallery. Powers' genius is of the quiet and pensive order, the natural offspring of his mild, unobtrusive nature; a trait which manifests itself in the retiring modesty and gentle grace of his female figures, and also in the repose of his masculine forms.

Henry K. Brown, born in Massachusetts in 1814, drew at twelve years of age a portrait of an old man which revealed his genius. Encouraged by his mother at eighteen years, he began the study of portrait painting in Boston. Attempting to model a young lady's head in clay, and succeeding, he turned his thoughts to sculpture. The sale of his youthful productions, with the added aid of friends permitted him to visit and pass some years in Italy. Believing the stimulus and direction of home life to be the legitimate field for the artist's toil after classic study abroad, returning home he fixed his residence at New York; which city as well as Columbia, S. C., are marked with the treasures of his skill. Among his works in marble are his "Hope," "The Pleiades," and "The Four Seasons;" and in bronze his statue of De Witt Clinton, and the equestrian Washington in Union Park, New York.

Clark Mills, born in the State of New York in 1815, apprenticed as a millwright, then as a plasterer, left an orphan by the death of his parents, went in youth to Charleston, S. C. His superior skill in stucco suggested an attempt at modelling in clay. His success in busts, particularly in the head of Calhoun, determined him to visit Italy. Passing through Washington City on his way he received in 1848 a commission for an equestrian statue of Jackson. His model was prepared from a horse trained to rear and stand poised on his hind feet, and the cast was made without a furnace, his fire being concentrated as in a coal-pit; the objections of men of science both to the stability of his work and to his method of executing it being met by practical demonstration on a small scale. When completed, and inaugurated January 8th, 1853, it was the first specimen in the history of equestrian statuary of a horse poised with his rider upon two feet. Mills' Washington, and his casting of Crawford's Liberty, have added to the fame gained by his Jackson. His genius, specially daring, taking models from nature and learning methods from practical pursuits has triumphed without an instructor in new paths of art. His life study has been to perpetuate the native men and ani-

mals of the American continent in a group picturing an Indian hunt of the elk, the buffalo, and the wild horse; all his models of these animals having been taken from specimens obtained at great expense and kept for years at his studio.

Erastus D. Palmer, born in the State of New York in 1817, pursued till the age of twenty-nine years the business of a carpenter and joiner. Having seen a cameo, he attempted with a simple file and knife to cut in shell the portrait of his wife. His success led him to devote some years at Albany to cameo carving. Turning his thoughts to sculpture, he modelled his infant Ceres, after his own child. From that time his study and labor have shown the wondrous power of self-education. His numerous works have been busts of the living, themes of classic and Christian sentiment and passion. His carving has that exquisite delicacy acquired in cameo cutting, while his conception is most etherial in its expression.

Horatio Stone, born in New York, near the Hudson, in 1818, through the influence of a mother who was an amateur had an early awakened aspiration to be an artist. The sublime of nature around gave tone to his enthusiasm; while every painting, engraving or moulding met with added practical direction. At an early age he entered the studio of Robertson of New York, and soon after that of Col. Trumbull the early American historical painter; at whose suggestion he entered a Medical School to study Anatomy as bearing on art. In 1846, being diverted from his purpose to visit Italy, he opened a studio in New York; which about ten or twelve years later he removed to Washington City; his attention being given to Sculpture and Landscape Gardening. Among his perfected works are his statues of Hamilton and Hancock; the latter being one of the most expressive monitors in the U. S. Capitol. Among his favorite studies is a monument to Smithson, idealizing his conception of the diffusion of knowledge; and another to Baker who fell in the late war. No American sculptor has a higher conception of the spirituality and sacredness which attaches to the sculptor's calling than Stone.

Among younger American sculptors many are displaying rare gifts. Rogers, whose bronze door for the U. S. Capitol has been admired even in Munich, where his castings were made, promises eminence in finished work. Barbee, whose "Fisher Girl" has won high encomiums wherever exhibited, has the genius, and promises to gain the culture of a true artist. Harriet Hosmer, alone in her eminence as a female sculptor, born in 1831, entering in 1850 a Medical Col-

lege at St. Louis for instruction in Anatomy, and afterwards trained at Rome in the studio of Gibson, has gained an early and growing fame both in England and America for her power of design in classic and historic subjects expressive of sentiment. In general, the sculptors of America have revealed a native fertility and versatility of genius which has not yet taken on a marked national cast.

BOOK IV.

ARCHITECTURE; OR THE COMBINING OF FORMS, WITH THE UNITED ENDS OF UTILITY AND BEAUTY.

The term architect is from the Greek *architektōn;* a word used as early as the days of Herodotus, and meaning a master-builder. It has come to us, however, through the Latin; as is seen in the objective term *architectura,* or architecture.

Architecture is primarily a useful, and only secondarily a fine art; while drawing is primarily a fine and secondarily a useful art, and sculpture is only a fine art. It was naturally the first of arts; since men require habitations to dwell in before they demand any of the ornaments which the other fine arts may add. Hence some critics urge that architecture should be made the first and leading one among the Fine Arts. In its origin, however, it was not a fine, but a technical art; simple and rude as was man himself. It is, in fact, the art, and the only art, in which animals, inferior to man, have displayed the skill which instinct alone, not reason, suggests. Architecture is not a Fine Art until drawing and sculpture, first becoming arts, add their grace and power to the builder's skill.

CHAPTER I.

ORIGIN OF ARCHITECTURE AS AN ART; AND THE PRINCIPLES CONTROLLING ITS FORMS.

As a useful art, Architecture must have begun with the origin of man; and in proportion to the simplicity of age and race in the human family has always been the simplicity of the art of building. In Eden there could have been little occasion for an artificial struc-

ture to shelter our first parents; for as they required no clothing to ward off cold, or the stings of nettles, venomous insects or reptiles, so they could have needed no other shelter than the bowers formed by branching trees and creeping vines. When coverings, wrought by their own hands were needed, as material prepared to their hand, first strong leaves, then skins, became their clothing,[1] so, perhaps, caves or thick trees were naturally formed habitations. It must have been long after their exile from Eden ere any elaborateness of structure could have been given to edifices of wood and stone; since finished tools, implying previously existing arts, were requisite for such constructions.

Sect. 1. Circumstances determining the Structure of Private Dwellings.

History attests, what we might beforehand imagine, that the first human habitations were both in form and material of the simplest conceivable structure. As the Arabs of the Asiatic Desert now spin and weave the hair of their goats, and from the cloth thus made form a movable roof over a hut whose sides are stone, earth, or brush-wood, so the patriarchs of the earliest days seem to have formed their humble abodes. The first dwelling mentioned in Sacred History is in this record; "Jabal was the father," or instructor, "of such as dwell in tents;" and of Jacob it is recorded that he "was a plain man dwelling in tents."[2]

The material of dwellings has always been dependent on the nature of the country and the wants of mankind. The keeper of flocks lives in a tent made of cloth easily removed. In the mountain regions in and about Palestine, the descendants of Lot, Esau, and Israel, in rude times made abodes in caves; and Homer says of the Cyclops, "Their abode is on the summits of mountains, and caverns serve them for retreats."[3] The rude aborigines of America made huts of ice and snow in the frigid zone, of mud and bark in the temperate latitudes, and of palm branches and grass in the torrid regions. In the plains of ancient Assyria, they built of brick laid in bitumen, because they had neither stone nor lime for mortar;[4] and in Egypt of limestone, sandstone, and granite, because all these were abundant on their river's brink.

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[1] Gen. iii. 7, 21. [2] Gen. iv. 20; xxv. 27.

[3] Gen. xix. 30; xxxvi. 20, Horite meaning cave-dweller; Judg. vi. 2; and Odys. L. IX., 106.

[4] Gen. xi. 3.

The style of building has varied equally with its material. Two necessities have controlled style; protection first from men, and second from the elements of nature. Cain, the first man of blood, with the fear begotten by crime, "built a city" for defence;[1] and dwellers in the lands bordering on the Asiatic desert, exposed from Job's day down to Arab incursions, built closely walled towns on precipitous hill-tops like ancient Jerusalem. Israel in the days of their Judges, which with them was the age of border warfare, dug caves in the mountains to which an enemy could have but one approach. The early Greeks also perched their first citadels on a jutting rock called the Acropolis; as is seen in ancient Athens and Corinth, and in modern Cairo. The Arabs of the Asiatic and African deserts, and savages of every land pitch their tents, or erect their huts in circles; within whose area their flocks may be secure and they combine for defence. Plato, in his Republic, argues that a military necessity first suggested public buildings; saying, "A city takes its rise from this fact; that no man can be self-sufficient; since we all have many wants beyond our own powers. Can you imagine any other principle originating the building of cities?" Aristotle, more comprehensive, going back to the ultimate principle, suggesting a prior cause which has led the Divine Being to permit men to be possessed of such a spirit of evil that protection is needed, and arguing that there could be no virtue unless there were vice to be resisted, no beneficence unless there were needy to relieve, urges that the inherent love of society for the sake of *aiding* others, rather than of being aided, the yearning of men to have power and repute as public benefactors, is the secret of organized society. Hence he makes Civil Architecture an art above Military Defences; a view which seems to lead Vitruvius to regard Civil Architecture as covering all that belongs to the art proper.

Yet again, the climate and shape of country, meteorological and geological peculiarities of a region, the exposure of houses to the sun's heat, to rain and hurricane, to earthquakes from below and to avalanches from above, will give laws for building. The houses of India are surrounded by open verandahs or piazzas to shade their sides; and those of cities in volcanic countries in South America are but one story in height, to guard against their fall when shaken by earthquakes. Swiss mountain dwellers build their cottages with

[1] Gen. iv. 17.

sharp peaked roofs and projecting eaves to cut and fling aside the falling avalanche; and on the other hand the denizens of sunny plains in Southern Asia cover their dwellings with flat roofs as promenades in the cool evening breeze.

It is important to observe that the result of necessity originates a law of taste. To put the Swiss cottage on an open field, or a grotto on anything but a hillside, to surround a house with an open verandah in the cold regions of the temperate zone, to build a summer house of brick, or a castellated structure of wood is a perversion of the very idea in which architecture originates. Thus in the simplest ages, and in the plainest structures reared for the abode of single families first necessity compelled association and uniformity in building, and afterwards taste came in to give a law and fashion which is the germ of the art of Architecture.

Sect. 2. The Demands of Man's Social Nature giving origin to Architecture as an Art.

As society advanced, men combined more and more; and then larger structures were required. When thus combined and co-operating to rear a structure for common shelter, for united assembling, or for general defence, one superior mind naturally acquired ascendancy and assumed sway, forming the plan and regulating the many hands employed in the labor of executing the design. Thus the office of *architect*, or chief builder, arose; an office which became more important, and demanded a higher order of art capacity and training, as the objects for spacious and lofty structures increased. The same yearning of taste which demanded trees pleasant to the eyes in Eden's groves and bowers, and which prompted man to dress and keep these abodes of lowliness where no storm made a more elaborate shelter necessary, that same insatiate craving for beauty and grandeur made the architect the great man in art. To this effect Plato again in the same connection suggests, "After the science of building had thus arisen," in necessity for common defence, "it separated itself from the other sciences and took the distinctive name architectural." What Plato from his cast of mind called *epistēmē*, a Science, Aristotle at the same day called *technē*, an art; Plato applying the term *architectonicē* to military, Aristotle to civil architecture. The word, indeed, at this era, had become sufficiently common to be used figuratively, as the synonym of artistic order and skill in the domestic and civil organization of society;

while Pliny afterwards metaphorically applies it to "the skilful power of the Architect, Nature."[1]

As to their uses, the structures of man have grouped themselves into three departments. Civil Architecture comprises the buildings erected as private dwellings to shelter families, and those reared for the assembling of men in thousands for purposes of social enjoyment, or improvement, according as the demands of mere love of Society, of taste, of learning, or of religion, have required. Military Architecture embraces the erection of forts, the digging of canals, moats and trenches, the construction of bridges, and all that relates to man as moving about the earth and coming into contact or collision with his fellow; and it is a striking fact, that the department of military engineering is the first to which we find the Greek term *architektōn* applied; Herodotus,[2] in his History of Egypt, speaking of the architect *tou orugmatos*, of the canal, and in his History of Syria, of the architect *tēs gephuras*, of the bridge. Naval Architecture relates to structures made to float as habitations, to fly as messengers of commerce, or to sweep the ocean and command continents as moving castles and fortresses. There is an attraction of art clustering even about the river rafts of the American Indian, the ocean canoes of the Pacific Islander, the harbor junks of the Chinese, the caiques of the boatmen on the Bosphorus, and the gondolas and gallies of the Venetians and Genoese; and art has had its place in the whole history of naval architecture, from the paper reed boats on the ancient Nile, to the far-famed clipper sailing vessels and mammoth ocean steamers of modern times. There is a charm of art, too, as well as of romance, that lingers through all the history of Military Architecture, and gleams about castle heights from that of David on Mount Zion, to those of the crags of the Drachenfels on the Rhine. It is, however, the leading principles of Civil Architecture alone, as developed in its history, that come into its ordinary study as an Art; Aristotle and Vitruvius, as observed, restricting its field entirely to Civil Architecture.

This branch alone of Architecture opens a wide field of survey; and it resolves itself naturally into several divisions. The leading purposes for which large public buildings, whose successful construction requires both the science and art of an architect, are erected,

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[1] Plato's Repub., B. IV.; Aristot. Ethics, I. 1, Polit.; and Poet. xix. 7; and also Pliny Hist., X. 91, "Architectæ Naturæ vis."

[2] Herodot. III. 60, and IV. 87.

may be included in these three; buildings made subservient to the supply of man's material, intellectual, and moral or religious wants The principles that should control their structure as designed for these three purposes, according to the Greek architects cited by Vitruvius, are these five; *first, taxis,* or order, the proper arrangement of parts before putting them together; *second, symmetria,* proportion in size; *third, euarithmia,* harmony in number, in the adjustment of the parts both in their separate dimensions and in their interlocking junctures; *fourth, diathesis,* or composition, the disposing of the portions of an extended edifice so that they shall be beautiful as a whole; and *fifth, oikonomia,* or economy, the securing of the useful ends for which the building was erected. Ruskin, in his somewhat fanciful form of statement in his "Seven Lamps of Architecture," presents five purposes and seven guides to their accomplishment. The *purposes* of edifices are: first, "devotional," for religious worship; second, "memorial," as private and public monuments for the dead; third, "civil," as public edifices for business and recreation; fourth, "military," for defence against armed foes; and fifth, "domestic," for family abodes. The seven lamps, or seven *guiding principles* that control the architect, are these; *first,* "Sacrifice," under which the Jewish temple is considered; *second,* "Truth," which leads to the discussion of the propriety of Gothic drops, frescoed domes representing the open sky of a hypæthral temple, and the use of iron as material for building; *third,* "Power," which embraces massiveness as an element of architectural effect; *fourth,* "Beauty," relating chiefly to architectural decorations; *fifth,* "Life," the making of an edifice the exponent of living things and of the men who rear it; *sixth,* "Memory," as monuments of history, conservators of old ideas, and relics of the past; *seventh,* "Obedience," respect for great men and their plans, as opposed to empiricism and striving for novelty.

Among buildings to promote material ends are markets, exchanges, and halls for the exhibition as well as the sale of the commodities and necessaries of life, which were represented by the *agora* of the Greeks and the *forum* of the Latins. Vitruvius gives a large place to this department of architecture: since among the Greeks and Romans the agora or forum had the double end of a mart for trade, and an arena for the display of physical prowess, and of intellectual culture; the markets of Roman towns being the great publishing centres in an age when newspapers were unknown. The Forum was an elliptical enclosure, whose breadth, Vitruvius says, should be two-

thirds of its length, surrounded by covered sheds or porticoes more or less costly. The Greek Forum had its porticoes very spacious, and two stories in height; the columns being crowned with marble entablatures. These stories were of sufficient height to have galleries in the lower portion of the entablature, where men of leisure could saunter for the sake of exercise. The pillars in the Grecian agora were close set; but in the Roman Forum their distance apart was greater since the galleries were occupied as places whence to witness gladiatorial combats. "The lower porticoes," he says, "are occupied by the offices of the bankers; which location is calculated to facilitate business and increase the public revenues; while the upper balconies contain seats for spectators of the diversions of the Forum." The Basilica, or Royal Exchange, which sometimes had within it a Hall of Justice, was a rectangular building, with a lofty portico, having inner halls and outer galleries. The Basilica, Vitruvius says, "should be contiguous to the Forum and on the side least exposed, so that the merchants who meet there for business need not be inconvenienced by cold in the winter." "The width should not be less than the third nor more than the half of the length." "The height of the columns should be equal to the width of the porticoes; which should be one-third of the distance of the columns measured across the basilica." Vitruvius minutely described one built by himself, which he regarded a model at Fanestrum; which was 120 feet long, 60 feet wide, having columns in its portico 50 feet high and five feet in diameter, underneath which were tiers of galleries rising above each other.

The buildings designed to meet intellectual wants were of two classes; educational and æsthetic. Those for *instruction* proper embrace Schools, Colleges, Lecture and Lyceum Halls, Libraries and Halls of collections in Science and Art. In early and later times, for practical instructors of the people, like Socrates, the *stoa*, or covered porticoes around the *agora* or forum, were the chosen audience halls; while for more select and private indoctrinating of disciples such buildings as the *Academia* of Plato, the *Lykeion* of Aristotle, and the *Mouseion* of Alexandria were erected. Those structures which were designed to minister to the *sensibilities*, were the theatre and the amphitheatre. The amphitheatres among which the vastest monuments of Roman architecture, such as the Coliseum, are now found, furnished exhibitions addressed only to the eye; while the theatre, both among the Greeks and the Romans addressed the mind through the ear as well as the eye. The nicest of acoustic effects,

based on mathematical calculations as well as on practical observations, were exercised in so adapting these immense audience arenas that the voice of the speaker might reach the tens of thousands of hearers. Vitruvius says,

"We must also be careful in observing that the situation chosen be not calculated through local circumstances to check the dilation of sound; but on the contrary be such as to permit the free expansion of the human voice. For sound is a subtle fluid acting upon the organs of hearing by the vibration of the particles of air which are put in motion and expand themselves in an infinite succession of circles. The effect is similar to that which takes place on the surface of water, previously at rest, when a stone is cast into it; in which we observe that a number of concentric circles are generated, which are constantly enlarging until circumscribed by the narrowness of the stream, or by some obstacle which prevents their perfect formation; when the undulations, meeting with interruption, the first, recoiling, resists the progress of those which follow in succession. The air is put in motion by sound in a similar manner; with this difference, that the undulations of the water are made in a plane surface, whereas in air they ascend as they extend themselves. Thus it is with the voice. When no obstacle interrupts the first undulation, the next and those following are perfect; and they make distinct impressions upon the ear of the spectators who are in the upper, as well as those that are in the lower seats; and that without reverberating. The architects of former days therefore made use of a form in the auditory of the theatre adapted to the configurations of air arising from the expansion of sound; and by the application of physics to the science of music, succeeded in effecting that the sounds which were uttered upon the stage should be conveyed to every part of the theatre clearly defined and well modulated. For, as musical instruments are formed of thin plates of metal or horn with a view to produce distinctiveness in the tones of the chords, so the principles on which the theatres of the ancients were constructed, and which were calculated to increase the powers of the voice, were deduced from the elements of harmony."

The moral ends sought in public structures are two; civil and religious. As Aristotle based his Politics on his Ethics, so the *pnyx* of Athens, where Demosthenes swayed the Athenian people when assembled in their legislative capacity, the Areopagus where the Athenian Senate sat for judicature, and the Acropolis covered with temples to the gods were alike moral powers. The Capitol of Rome

was at once a shrine of religion and the arcana of the State; Roman historians, statesmen, and philosophers alike appealing to the influence of this single common edifice, the bond of national and religious sanctity, in giving through all their history the union which was the power of that great people.

The structures erected for religious ends were *temples* and *tombs;* Egyptian and Roman, Asiatic and European minds alike conceiving the idea, that garnished sepulchres for the dead were quite as effective as adorned temples for the homage of the living in securing for men Divine favor and benefaction. In ruder ages, religious worship seems to have been held in the open air, under shady trees within an enclosure; as the ancient Druids performed their sanguinary religious rites, and as the most enthusiastic worshippers of spiritual Christianity now gather by thousands in groves where no house of adequate size can be procured. When afterwards temples were erected, it became common for Pagan and Jewish temples, Christian Churches and Mohammedan mosques, to be erected in a large enclosure. No proper idea can be obtained of an Egyptian temple at Thebes, or of the Jewish temple at Jerusalem, unless regard be had to this peculiarity; while also the allusions of the classic writers of Greece and Rome to sacred shrines, is but imperfectly comprehended without this distinction be made. The *temenos* of the Greeks was the sacred enclosure, consisting of grove and open field, in which the sacred rites were performed; the altar and sacrifices, involving the slaughter of bullocks amid blood and filth, and the dense smoke of the burning flesh, requiring out-door grass sward beneath, as well as out-door air and sky around and above; while the *naos* was the builded structure within this enclosure. So, too, among the Romans, the *delubrum* is the enclosure, and the *templum* or *ædes*, the temple or house; though this distinction was not always observed in later days when the delubrum, like the modern church-yard, had disappeared from crowded cities. To the most ancient sacred enclosure and house at Rome, Pliny thus alludes; "Among the most ancient delubra, that of Quirinus or Romulus himself, is esteemed. In this were for a long time two sacred myrtle-trees before the house itself; one called the patrician, the other the plebeian."[1]

In the history of Architecture, a large part of the skill of artists

[1] See Homer Iliad. VIII. 28; Odys. VIII. 363; Herodot. II. 155; III. 142· Pliny Nat. Hist. XV. 36.

and of the lavish expenditure of money, time, and toil made by the people of great nations, has been exhausted upon structures designed for religious ends. From the times of the rearing of Egyptian temples down to the building of Christian Churches, Sacred Architecture will be found to be the central interest in the history of the art, and often entirely to absorb it.

Sect. 3. Principles originating and giving form to Columnar Architecture.

As already intimated, the purposes of shade and shelter originated styles of building in different lands. The same two ends evidently gave origin to columnar appendages to edifices; which, originating in necessity, came afterwards because of their prominence as architectural features, to be the chief field in which genius and skill sought its highest triumphs. This idea is embodied in the word *façade*, used to designate the principal front view of a building; a term derived from the Latin *facio*, to make, whence the Roman *facies* and English face, referring to the front view of the head in the human form, the portion of the figure in which the artist's skill in execution is specially tested, and which is therefore the *work* of art. In warm climates the hut of the humblest laborer requires open yet sheltered space for comfort during the day; and hence a covered awning, or piazza, though it were but a rude shed, was naturally erected even in higher latitudes upon the side of dwellings having a southern exposure. Again in cold climates, in order to throw rain and snow, as they fall, to a sufficient distance from the sides and especially from the entrances of dwellings, projecting eaves and porches were required on both sides of the house. At first these projecting eaves and porches would be constructed with rough and easily prepared supports; but afterwards they would take on more of richness of material. The same necessity which led to the introduction of projecting roofs supported by columns in private dwellings would for a stronger reason lead to their use in public edifices; under whose porticoes hundreds would need and seek shelter at the time of their assemblies. What seems thus before-hand to be expected, history realizes in the columnar architecture of many and varied lands.

Vitruvius, and other able practical and critical authors, give hints as to the material and shape of the columns first used, and as to the origin of different orders of architecture, in Greece and in other lands. Sections of the trunks of trees would naturally be first used as the corner-posts of houses and as supports for its projecting porch. The

proportionate stoutness of the tree selected would naturally be adapted to the weight to be supported; the oak, very robust, supporting a massive load of branch and twig, and being but a few diameters in height up to its branches; the maple and poplar more slender because its top to be supported is much lighter, and its height therefore being in much greater proportion to its diameter; while the palm sustaining but a slight umbrella top is almost spindle-like in its proportions; this latter being the model of columns in the umbrella-topped and airy summer palaces in the land of the palm-tree, as the former were for Egyptian, Grecian and Gothic temples. The slight yet geometrically measured taper of the tree trunk, sloping inward to the top, adjusted by the Infinite Mind to the precise form of greatest strength, entered into the proportions of Grecian as well as of Egyptian columns. The bulging projection of the stump at the tree's foot, itself a base to the column when cut near the ground, became a natural model for the bases of columns in the different orders of architecture, so rounded as to present no jutting corners for passers by to strike. The branching projection of the spreading boughs at top when cut just above their junction with the trunk, was equally the natural model for the capital of a column.

There is a special, as well as a general analogy guiding to principles of design in columnar architecture. The Egyptians, on whose soil, annually covered with water for four months, no tree would grow, and whose feeding so much on marsh roots led the Greeks to call them Lotophagi or lotus-eaters, naturally selected as the model of their columns the most beautiful of their marsh plants; making their base, shaft and capital resemble a bundle of the tuber-shaped root, the graceful stalk, and the acorn-shaped bud or bell-shaped flower of the lotus. In the simplest of structures, such as the wigwam of the North American Indian, the Arab's tent, the Hindoo's verandah, and the European emigrant's log cabin, the native tree of whatever kind has been the material as well as the model of rude builders. So, too, the broad spreading tree-topped roofs of the pagodas of Central India, whose massive solid centre, with its projecting tent-like porticoes surrounded by light columns, was modelled after the huge trunks and slender drop-stalks of the banyan tree; as also the inner design of the high pointed arches, of the groined and fretted ceilings, and of the drops and pendants of the Gothic cathedral, was derived from the arched avenues between forest-trees, the crossings and intertwining of their branches, and the hanging clusters of their foliage, flowers and fruits. Vitruvius dwells at length upon this as the

model originating the idea of Grecian and Roman columnar edifices; while at the same time he teaches that the proportions of columns, as indicated in the Osiride of the Egyptians and in the Greek Caryatides, are copied from the human figure.

Orders in Columnar Architecture whose particular consideration properly belongs to that of the different ages and styles of architecture, have been made to depend on slenderness of shaft and elaborateness of ornamented capital. The counter ideas of strength and of grace, of utility and of beauty, of material convenience and of moral expressiveness have been balancing principles ever controlling taste and design in columnar architecture; and the style of building in different ages and lands has depended on the proportionate ascendancy in the minds of a people, or of architects, of any one of these conflicting or conspiring principles. Thus in Egypt the specimens of columnar architecture remaining are all of the massive kind, while those of Modern Asia where Egyptian taste anciently prevailed, present the two extremes of excessive massiveness and of most fragile lightness; indicating, perhaps, that as in Egyptian sculpture, so in Egyptian architecture, the lighter structures which their climate must have invited have long since perished. In Greece, whose architects were as truly the opposites of the Egyptians in architecture as in sculpture, there was an effort to *harmonize* the extremes which in Asia are made to *antagonize;* and they sought in their three orders of columns, first, one that should have strength predominant and beauty subordinate; second, one in which beauty was predominant and strength subordinate; and third, one which should give the two ideas equal control. In the latter and better days of the art in Egypt, the same end, either through a reflex influence from rising Grecian genius or from the development of a purer native taste, was sought by Egyptian architects; so that the three distinct orders are as marked in the massive columns of Egyptian temples as in the graceful ones of Grecian shrines.

Sect. 4. Local Circumstances, and National Peculiarities of Æsthetic Culture and Moral Convictions, giving origin to leading styles in Architecture.

There are certain general parts of which every building must be made up, for whatever purpose erected; the modification of which parts through the influence of local, national, æsthetic or moral causes existing among any people have led to diversity of style, and to the origin of what may be called schools in architecture. These

parts, taken in the natural order of their erection, are the walls, the roof, the steps or platform, and the columnar projections or porticoes; all of which, both as to material and form, the several causes mentioned above have served to vary and modify.

Local circumstances, to a great extent, determine the material employed in buildings. In a new country, stocked with wood, like America, the exterior wall, as well as the interior and roof are from necessity and also from a consequent taste, built of this perishable material. In the plains of ancient Assyria, where there was neither wood nor stone, burnt brick was used; in Egypt, where there is abundance of stone and no rain, stone for public buildings and unburnt brick for huts of the laboring people have always been employed; while at this day in Mexico adobe or burnt clay, and in Europe and America even iron is becoming a common building material. The slight rains of Northern Africa and Western Asia allow roofs to be flat, so as to serve as delightful elevated promenades during the evening breezes; while the rains of Greece demanded a gentle slope, and the snows of Switzerland a steep roof-pitch. The neighborhood of hostile nations which requires thick and high walls in the building of a city upon a plain, in a hill-country demands only a castle built upon an acropolis. The length and breadth, and height of porticoes is naturally greater in mild than in cooler climes. The temple of Egypt on a level plain needed no steps to mount to the entrance; but a Grecian temple on a rounded eminence must have a flight of steps around the depressed border. These natural causes may be allowed too much weight both in design and in criticism, but they cannot be wholly disregarded.

So, too, forms of religious belief, moral opinions and habits have given cast to leading features of structures reared for the same common religious ends. The ancient Egyptians, material in their notions of spiritual things, fond of the recondite and magic arts, worshippers of reptiles such as the serpent and crocodile, transferred their gross spirit to their temples; rearing massive walls to cast a deep dark shade, and covering the dismal walls of tombs with carvings and paintings of secular and material subjects. On the other hand, the lively spirit of the Greeks, their refined culture, their love of ideal beauty, created, as native to their genius, temple-walls of pure white marble, a roof slant of most gentle slope, columns proportioned after the ideal human forms which as deities they worshipped, and steps whose easy ascent allowed a princess to move upwards with scarcely a bend of the knee. Yet again, the Romans, comprehensive and

cultured, uniting Egyptian massiveness and Grecian grace, originated a style of architecture which united strength to beauty, and made elegance aid utility. Lastly, there dawned upon the world a revelation of religious truth, whose very nature implied social gatherings for religious instruction as well as worship, and demanding an earnest and growing effort to attain a style of Church architecture which should unite convenience with suitableness of design and expressiveness in the composition of every part; an ideal which has been struggling upward towards a realization during all the ages of progressive Christian civilization.

The uses to which architectural structures have been appropriated, the result mainly of the condition of existing intellectual culture and religious enlightenment, have influenced those surroundings and appendages of architectural works, especially shrines of religion, so greatly affecting their general style. The Egyptian, Hebrew and Mohammedan sanctuaries, shrines of religious rites maintained by the State for its support, were begirt by fortress-like walls as an external defence; while, too, designed to be the centre of the Schools where should be trained the intellectual supports of that civil and religious system, the enclosure of the ancient Hebrew temple, like that of the modern Mohammedan mosque, was lumbered and marred with the rooms requisite for the purposes of scholastic education. The Greek temples, like the Churches of Spiritual Christianity, stood out alone, guarded by their own sanctity; and the school had its separate seat. This latter fact may aid to definiteness of view in considering the four distinct ages and styles of architecture just adverted to.

CHAPTER II.

EGYPTIAN, THE TYPE OF ASIATIC ARCHITECTURE; IN WHICH MASSIVENESS IS THE AIM.

THE relics of ancient Architecture to be traced throughout Eastern and Southern Asia, and having their true type in ancient Egypt, seem by their massiveness to be the very embodiment of the spirit that animated the men who had just escaped the deluge, as pictured in the history of the first great structure reared by mortals. The

builders of that huge pile Moses represents as saying, "let us build us a city and a tower whose top may reach unto Heaven; and let us make us a name lest we be scattered abroad upon the face of the whole earth." Josephus the most competent of Jewish commentators upon the antiquities of his nation represents Nimrod, of the same race with the Egyptians, to have been the chief who rallied the human family to unite in the rearing of this structure; and that he said, "He would be revenged on God for destroying their forefathers, and should he have a mind to drown the world again; for he would build a tower too high for the waters to be able to reach its top."[1] The massive was certainly the aim in this early structure; and thence in less than two centuries that same branch of the human family transferred it to Egypt.

Sect. 1. The uses of Egyptian Structures called Temples; giving character to their Forms of Architecture.

There are two classes of massive and extensive structures in Egypt, whose vastness in their ruins still fills the world with admiration. The first class, reared above ground, were called temples; though they answered the three-fold purpose of palaces for royalty, of fortresses in war, and of shrines for religious worship. The second class, constructed under ground, were called tombs; which though designed exclusively as burial-places for the dead, were, in times of emergency, made safe retreats, and even magazines in war; like the labyrinth, the Pyramid cells, and the tombs of Egypt, and also the arched passages beneath the mount on which the temple of Solomon stood.

Both the style and design, often mistaken, of the ancient Egyptian temple, so-called, is indicated in the structure and grouping of modern cities in India. Every intelligent reader of the history of the late campaign of the English army in India, especially of the advance upon and the holding of the city of Lucknow, must have been struck with the disposition of the different fortresses, called Bagh, situated half a mile apart or more, and distributed through the town; while the intervening space was occupied by the residences of the people only one story in height, over whose roofs a galling fire was poured upon the English infantry as they pressed on from fortress to fortress. With the plat of such a city before him, the visitor to Thebes in Egypt, called by Homer *hekatompylai Thebai* or "hundred

[1] Gen. xi. 1—4; and Josephus Antiq. I. iv. 2.

gated Thebes,"[1] can readily reconstruct from its remaining ruins the entire city.

On the Eastern bank of the river, which is half a mile wide, is, first, the temple of Luxor, close by the river's brink, covering an area of a quarter of a mile square; and distant from this a mile and a-half to the northeast, and back from the river three-fourths of a mile, is the temple of Karnac, covering half a mile square. Riding from one to the other of these structures the visitor is passing through an avenue of sphynxes whose heads and backs are still raised above the annually deposited mud of the Nile's inundation. Passing over the river to the Western bank at a distance of about half a mile is a third temple; at about a third of a mile yet farther, a fourth; and so on till even a seventh and an eighth are passed. Of these the fifth is the remains of the celebrated Memnonium, before which still stand the immense seated statues of Memnon and his brother; while the sixth is the structure called by the modern Arab name "Medinet Aboo," famed for the beauty and perfection of the bas-relief sculptures on its walls.

Sect. 2. General arrangement of the parts of the Egyptian Temple.

Approaching now the temple of Karnac, the most extensive and best preserved of the number, a general survey gives this outline. Within the centre of the immense area, half a mile square, was built the original shrine by a Pharaoh living before Joseph's day; the name of the Pharaoh of that age, enclosed in the oval called a cartouche, being on the walls. The general structure of the original shrine is seen at Edfoo; where one of the best preserved of the inner temples is found. The foundations are of limestone; the builders evidently understanding, since this arrangement is universal, that while sand-stone disintegrates from the moisture of the soil, limestone is hardened by the same cause. The external walls are of sand-stone easily cut by the chisel with the sculptures which cover them; a stone too which in the climate of Egypt, where there is no rain, is so durable that these carvings are still after ages perfectly preserved. The roof is made by laying immense blocks of sand-stone across from wall to wall. The interior facing is of granite, whose hardness allows a polish like that of marble; a finish which the builders were most skilful in attaining. From the corners of the

[1] Homer, Iliad. IX. 383.

front of this first shrine running on the right and left, two massive walls of sand-stone from thirty to forty feet high, projected forwards; forming the sides of a hollow square, the back of which was the shrine. A castellated wall, towering 100 feet high, formed the front of this open square; whose front and sides sloped at a graceful angle inwards, like the obelisks, while the top was crowned with a curved cornice, consisting merely of an abacus or upper stone. This entire front is called pylon, from the Greek *pylē*, a gate; the gate or entrance being in the centre of it at the base. This pylon with the two side walls encloses an area or open court of three or four acres; along the sides of this open court, at the right and left on entering the gate and back against the wall, is a covered colonnade, as around the Grecian agora and Roman forum; and in front of the temple, at the bottom of the court, is the portico of the temple with a double row of columns. In front of the pylon towered a pair of lofty obelisks, or of gigantic statues, or of both; the obelisks being of red granite from 60 to 100 feet in height, and from twelve to fifteen feet square at the base, tapering gradually till near the top where they terminate in a pyramidal point; and the statues being of red granite or grayish porphyry, and rising sixty feet sometimes in a standing posture. In the temple of Karnac, covering half a mile square, portion after portion, halls, porticoes, obelisks, enclosing walls and pylons, were added during a period of 1800 years from the days of Joseph and the Egyptian Pharaohs to the times of the Roman occupants after Christ. In the grand hall of this structure is a forest of columns in rows covering an acre or more of ground, two rows of which are twelve feet in diameter, and sixty-six feet in height. Over the walls of an entrance passage at the East a roof is thrown formed of blocks of sand-stone about five feet in height and thickness, and about thirty feet long, which had been raised to the top of the two side walls about thirty feet high, and laid across from wall to wall. A pair of obelisks in front of the grand hall of Karnac measure ninety-two feet in height.

Sect. 3. The Three Orders of Columns and the Form of Cornice peculiar to the Egyptian Temple.

As already considered, it is in the columnar appendages of an edifice, which from their prominence strike the eye, that the artist has a field for the display of his skill. The portions of these appendages which give names to orders, are the sculptured heads at the summit of individual columns, called capitals, and the corresponding

projecting head of the combined range of columns called the *corona*, cornice, or crown, with kindred reference to the main feature in sculpture.

In Egyptian, as in Grecian architecture, three orders are found; marking either original complementary suggestions, or successive stages in the progress of improvement. In Egyptian structures, temple walls and pylons, as well as obelisks and pyramids, slope inward from the base to the summit; according to the law of strength suggested by nature in the trunks of trees, jutting rocks and mountain peaks, and according to the law of beauty based upon this law of stability specially marked in the human form, from which, as the Creator's master-work, all other things beautiful seem to be modeled. This inward slope from the bottom up, in walls and columns, is more strikingly presented in Egyptian than in Grecian architecture, as is also the projection above of the capital and cornice; the Egyptian exaggerating nature so much as to falsify her law.

In these columns there are three distinct classes, named by the French savans of A. D. 1798 after the object in nature from which their capitals are modelled; first the lotus-bud capital copied from the closed bud of the water-lily; second the lotus-flower capital, or open lotus; and third the Osiride capital presenting a four-faced head of the god Osiris cut in complete relief. These three orders have been classified by T. U. Walter, LL. D., the architect of the U. S. Capitol, as the *robust*, corresponding to the massy Greek Doric; the *medium*, or slender and graceful, corresponding to the Grecian Ionic; and the *delicate*, yet more slender and ornamented, corresponding to the Greek Corinthian; the second in his enumeration being the third of the French engineers, and his third their second. The robust column of the Egyptian has the proportion of from four and a-half to five and a-half of its own diameter as its height; the shaft was sometimes smooth and sculptured, but generally reeded and banded in representation of a bundle of lotus stalks; its capitals were in form like a lotus-bud either smooth or slightly foliated; while its base was rounded and foliated like a tuber root. Specimens of this style have been successfully attempted in the façade of the Debtors' wing of the Philadelphia County Prison, and in the Penitentiary at Trenton, New Jersey. The medium, or Osiride column, is six diameters in height, the proportion of the human figure; the shaft is plain or sculptured; the capital has four human faces with cows' ears in complete relief with a temple-shaped mitre above each face; while its base is a plain projecting foot-slab. This order has not been

copied in this country. The delicate, or lotus-flowered column, varies in proportionate height; the shaft being at Ombos $5\frac{1}{4}$, at Thebes in the grand temple of Karnac $5\frac{1}{2}$, at Latopolis $5\frac{3}{4}$, and in the temple of Apollinopolis 7 diameters. The base is rounded and foliated as a tuber root, and the capital is an inverted bell or open lotus-flower, sometimes smooth, sometimes slightly foliated, and sometimes with leaves deeply cut.

The French classification, made upon the ground by their ablest artists and savans is doubtless full and correct. The lotus-bud, on the immature stalk, has in nature a less elevation than the flower; as the shaft having this flower as its capital is proportionately longer than that having the bud as its head. The shaft of the more robust order is often scolloped to represent a bundle of lotus stalks, while sculptured bands running around indicate the strength naturally belonging to such a bundle. In the sculptures of the tombs the lotus is often represented growing in water, and the bud stalk is always represented as shorter than the flower stalk, the bud stalk not having really reached its full growth. While, too, these two columns vary in proportionate height as the plant does in nature, the Osiride preserves the fixed law of the human stature about six diameters in height. The foot, too, is the precise copy of the tuber root of the plant.

A mixed or composite order grew up after the Grecian conquest; the capitals being both Osiride and foliated; specimens of which are found in the Isle of Philæ, at Dendera, at Karnac, and at Apollinopolis. The special knowledge of geometrical proportions known to the Egyptian is seen by cutting a horizontal section of one of the columns. The depressions or grooves in the reeded shaft, and the periphery of the capital are found to be included within a series of overlying squares inscribed in a circle; showing the nicety with which every part of the surface of the shaft and capital was calculated from the centre of the column.

The cornice of the Egyptian temples was formed by a large cap stone, which projected over and in front of the wall, a distance equal to about one-half its height. It was carved with a single cavetto, whose curve began at one-half its elevation and turned upwards and outwards to its top. In striking the sweep of the curve in the Egyptian cornice one-half the height of the whole cornice stone was made the radius of curvature; while in some modern copies of the Egyptian cornice the circular sweep extends from top to bottom of the cornice stone, and the radius taken is the entire height of the stone.

A striking contrast is observable between Egyptian and Grecian architecture in this; that while the Greeks employed the more elaborate curves of the conic sections, as the ellipse and parabola, in elaborating architectural ornaments, the Egyptians used only the simpler curve of the circle. A plain fillet or band was cut along the top of the cavetto, and an ornamental bead ran along its base. The bead also ran down the corners of the wall in the more finished structures of the later ages of Egyptian Art.

Sect. 4. The Structure of Egyptian Tombs, the Façade of Rock-hewn Temples and the Labyrinth.

The tombs of Egypt are immense and extended specimens of architecture beneath ground. Those back of the large cities of Egypt are excavated into the side of the limestone cliffs which form the two walls of the ravine in which the river Nile and its alluvial banks, not more than eight or ten miles in extreme width, constituting the soil of Egypt, lie. This soft stone was cut into large halls with lateral passages and rooms along each passage. The face of the walls was covered with a mortar cement, alluded to by Moses in Egypt, and by Daniel in Babylon,[1] which hardened so as to receive the nicest touches of the chisel; and the walls thus prepared were covered with sculptures and paintings presenting all the scenes of active business life. The numberless chambers were each in succession filled with the coffins of the dead placed on their feet in a standing posture; and were then successively walled up, till the whole range was occupied. The king under whose reign the tomb was excavated, was laid at the bottom of the entrance-passage in a sarcophagus; and his name in hieroglyphics was written at the portal. Finally the exterior entrance in the mountain was closed by an immense stone, and the desert sand heaped over it. Such tombs had, of course, no exterior architectural character.

In Nubia, above Egypt, where the harder sandstone both required and allowed it, immense rock-hewn temples, with columns and architectural ornaments cut in the solid rock, were executed in the style of Egyptian art. The most celebrated of these, a type among rock-hewn temples, is that called Aboo Simbel, about one hundred and eighty miles above Syene, on the Nile. It is dedicated to Athor, called by the Greeks, Aboccis, the sacred cow. In the façade of the temple are two colossal seated statues, the most beautiful in all

[1] Deut. xxvii. 2, 4; Dan. v. 5.

Egypt, about sixty feet high. The length of the arm from the elbow, which can be readily measured since they are buried in the sand to the lap, is fifteen feet from the inner side at the elbow to the end of the middle finger. Several statues in complete relief are cut in the façade, which is about ninety feet high, forming wonders of art. The depth of the grand inner hall, which is adorned with eight Osiride columns, each seventeen feet eight inches in height, without the cap and pedestal, is ninety feet; while there are interior chambers extending back a distance of two hundred feet.

The famed Labyrinth is the most remarkable specimen of the underground architecture of the ancient Egyptians. It was situated on the south side of that rich bosom of cultivated land, on the West of the Nile, called now the "Fyoom," about fifty miles above ancient Memphis, embracing an area of about forty miles from east to west, and thirty from north to south. In the centre of this rich tract of land was the Lake "Mœris," on whose shore stood the Labyrinth. It consisted of a union of twelve palace-temples above ground, with twelve corresponding tombs below ground; including in all one thousand five hundred rooms. A pyramid of sun-baked brick originally four hundred feet square, and the ruined remains of one of the palaces about six hundred by three hundred feet, now remain uncovered. The poetic picture Virgil gives of the one in Crete, built by Dædalus, with a "thousand passages,"[1] through whose windings even the artist had to guide himself by a thread, has given a fabulous air to this wonder of Egyptian art.

Sect. 5. The Obelisk and Pyramid as Types of the Massive in the Architecture of Egypt.

Two features of Egyptian architecture peculiar to it in common with that of Asia are the obelisks in their temple structures and the Pyramids among their tombs. The obelisks which were placed in pairs before temple entrances are needles of red granite sloping upwards from a base having as its measure about one-twelfth of their height, tapering abruptly at the top to a pyramidal point, polished to a mirror-like smoothness, and covered with hieroglyphics. While scores of these have been removed to distant lands and cities, only eight of these favorite objects of plunder remain in all Egypt. Of those removed the first was borne off by Augustus Cæsar to Rome about the period of the Christian era; while the last was conveyed

[1] Virgil Æneid, VI. 27; "mille viis."

by Louis Philippe to Paris A. D. 1836. Publius mentions forty-two conveyed to Rome alone between the times of Augustus and of Constantine; and Constantine carried several to Constantinople. Of the eight that are now left in Egypt, two are found at Alexandria; one stands lonely at Heliopolis; and five tower at Thebes, four in the Grand temple of Karnac, and one in that of Luxor. The largest pair in the temple of Karnac are ninety-two feet high, and eight feet in diameter, while the largest removed are the one in front of St. Peter's at Rome, seventy-eight feet, and that at Paris seventy-six feet high. Those at Thebes are still perfectly mirror-like in polish after the lapse of ages; but Cleopatra's Needle, so called at Alexandria, is much defaced on the seaward face by the salt spray. A peculiar specimen of the knowledge of the laws of optics and geometry possessed by the Egyptian artists is observed in the single remaining obelisk of Luxor; as also of its companion now at Paris. The faces have a convexity of surface amounting to an arc of 3°, designed manifestly to prevent the darkening effect of the complete shadow which otherwise would rest upon the entire face at the same time, and thus hide the sculptures when the sun was for a short period of the morning and evening back of the northern face so as to give it no light.

The Pyramids, as their internal chambers, the bodies of kings found there in modern times, and the testimony of Pliny and other ancient writers show, were tombs of Pharaohs. The form of the Pyramid, like that of the obelisk, represents, as its name from the Greek word "fire," and also Plato's allusions intimate, a tongue of flame; the emblem of the spirit ascending. They were a very ancient conception, and laid aside in the advance of the race; the first and largest, that of Cheops, having been built 200 years before Abraham's day, and the last during the time of the Hebrew patriarchs. The existing ones consist of three groups at the modern villages of Ghizeh, Sakkara, and Dashoor, back of Old Memphis; the first great city of Egypt, situated just at the head of the Delta. The oldest and largest of the pyramids may serve as a specimen of all. It was 764 feet square at the base, covering over thirteen acres, and 480 ft. 9 in. in height. The slope of its side therefore is an angle of 51° 51′; a steepness of inclination which makes it difficult, and even dangerous of ascent. This Pyramid was built of limestone blocks; most of which are more than thirty feet long and three and one-half feet thick. In rearing this huge pile, the architect, as Herodotus[1] describes, began at the centre,

[1] Herodot. II. 125.

raising the blocks by machines from range to range quite to the top, and worked downwards and outwards, adding thus one step in each successive layer to the elevation and extension. In the centre of the Pyramid were several rooms, which were so located, and reached by passages so circuitous and so narrow, descending and ascending at jutting angles, each of which allowed a closing and concealing door, that future entrance was next to impossible. The Pyramid stands with its faces due North and South and East and West. The entrance is on the northern face about one-fourth of the distance upward from the base; and it was placed twenty-three feet to the east of the centre, evidently to conceal it the more securely. The steps formed by the projecting layers are about two feet broad and three feet high; which steps were originally filled up by triangular or pyramidal blocks, after which the whole was finished down with a cement of marble-like hardness and smoothness. The entrance passage declines at an angle of 27°; and as the latitude of the Pyramid is about 30°, this, with other like indications, have been regarded as an index to the Egyptians' knowledge of Astronomy as well as of Geometry. Early historians agree in the statement that the Pyramids were designed to be the tombs for kings; but ancient tradition hints a theory revived by modern savans that the granite cased inner vaults were meant to contain standard weights and measures. Thus Prof. P. Smyth of Edinburg, after elaborate observation and study on the ground, regards the granite sarcophagus in the King's Chamber as a standard measure; and the seven sides of the Queen's Chamber he thinks an indication of the division of days.

Sect. 6. The History of Egyptian Architecture; the Permanent Type, massive in Material and Permanent in its rude and sombre cast; its simple Massive Originals; its Asiatic Gorgeousness; its Grecian Refinement; and its Roman Grandeur.

Egyptian architecture, having a long history and well preserved monuments, furnishes a most striking exhibition of the power of national conceptions in controlling foreign ideas introduced, and of preserving substantial types while it may be modified in external aspect by an improved civilization. The Egyptian palace-temple and tombs, whether under Asiatic or European rulers of varied nationalities, never departed from the general plan of structure and principles of design already considered. Though entirely unlike their own religious shrines, Asiatic wise men and Grecian and Roman conquerors, reared temples having the same flat roof and circular

cornice, with porticoes having columns of one of the three Egyptian orders, fronted by immense open courts surrounded by colonnades, and having obelisks and colossal standing or seated columns before their portals, as well as avenues of guarding sphynxes leading to their outer entrances. All the foreign possessors of the land, too, went back to the line of Desert mountain rock into which to cut their tombs; they excavated the branching passages; they stuccoed and carved the walls, and they drew pictured and painted scenes of life in a style perfectly Egyptian; denationalizing themselves to become ministers to ruder conceptions.

No less than four eras are distinctly marked in the history of Egyptian architecture. The first is the age of rude native taste. As if the spirit of the men who built the tower that was to reach unto heaven had followed them in their Western emigration, as already intimated, the race that going westward from the Euphrates some twenty-five days journey to the rich Delta, renewed in the Pyramids, only a century or two later, the irreverent and vain aspiration of their proud but humbled ancestry. The very extreme of the effort at massiveness showed itself in their first attempts. A single specimen only of the style of this age, the pyramids excepted, remains to preserve its features; the inner shrine of the great temple at Thebes. This shrine is of sand-stone, its columns are plane octagonal shafts, quite unlike the rounded cylinders of the succeeding age; while the dimensions of the room, though of massive material, are more cell-like than the broader structures that succeeded. The Pyramids at Memphis of limestone, and their inner ceiling of granite, and the shrine at Thebes of sand-stone, show that so far as material was concerned the Egyptian type was fixed from the first.

The second era was one which we may perhaps designate as that of Asiatic gorgeousness. Presided over probably by that race who have given permanent intellectual renown to India, this era of early and controlling foreign science began in the days of Joseph with Osirtasen I., it reached a noble development under Thothmes III. of Moses' day, and it culminated under Osirei and his famed successors Remeses I. to IV. a century or two later. Its matchless monuments at Thebes astound the modern traveler in the grand hall of the temple of Karnac, the Remesium and the Memnonium, as well as in the superior tombs back of that proudest city of ancient Egypt. Its type is embodied in one of that forest of columns in the grand hall mentioned; each twelve feet in diameter and sixty-six feet high, well proportioned and of the lotus-bud or robust order, and all covered

with the richest sculpture and painting from summit to base; that type being the massive native Egyptian in material with Asiatic gorgeousness in adornment.

The third or Grecian era, had the favorite centres of its erections at the extremes, Alexandria on the Northern and Philæ at the Southern limit of the land. Its grand works at Alexandria were the Pharos, or light-house, a square tower of white marble with projecting balconies, the Library, Museum, and other edifices reared by the Ptolemies, all of which have disappeared. The beautiful temples, well-preserved, on the little Isle of Philæ, in the river channel here greatly narrowed, more entrancing from their contrast with the unshapen rocky ledges all around, are truly Egyptian in all their features, yet having a light grace in their proportions which none but a Grecian artist could have given.

The last and Roman era has its two grand monuments in the temples of Dendera and of Esneh. Both are simple shrines, without enclosing courts, pylons or obelisks; but loftier and grander than any earlier covered structure in Egypt. That at Esneh has columns with the lotus capital; those at Dendera are Osiride; both have a screen exquisitely wrought in a sort of lattice running between the outside row of columns and rising to half their height. The zodiacs on the ceilings seem a suggestion of the Julian period in astronomy. The absence of surrounding pylons, though retained by Greek builders at Thebes, the omission of obelisks and statues in front, though Alexandria, Rome and Constantinople, were filled by Roman plunderers with these memorials of past Egyptian grandeur, are marked features of the independence of the Roman sway; while the perfectly Egyptian style and idea of the shrine itself is an interesting comment on Roman policy, which not only recognized but adopted the religion, as well as the local customs and State institutions, of every conquered nation.

The student of Egyptian architecture in the single temple of Karnac, covering a half square mile, has before and around him an epitome not only of all the four eras, but of several stages in some of these eras. Commencing at its central shrine and proceeding outwards, with such a guide as Wilkinson, not only the native Egyptian, the Asiatic, the Grecian and Roman ages, but the improvement during the principal of these eras can be readily traced. This is specially conspicuous in the second era the age from Joseph to the successors of Moses. In the Grecian sway may be seen the sad mementoes of Grecian exasperation at the stern resistance made by this

great and proud city, then at the zenith of its power, to the advance of the Macedonian conquerors; and the equally sad efforts to repair their ravages by lighter Grecian restorations. The Roman additions are so few and faint as to indicate the decline into which the grand old city had in their day fallen; only justifying slight repairs.

Sect. 7. The Architecture of India, Eastern Asia and Western America; the Declining Phase of the Massive Style.

As in sculpture so in architecture a family resemblance in art-execution, of growing degeneracy in proportion to the decreasing culture of each succeeding nation, can be traced eastward from Egypt through India, China, and Polynesia, to Mexico and other parts of America. Its ancient relics are most manifest in hither India, Polynesia, and America; but in farther India and China modern structures are degenerate specimens of the same style.

In India the most interesting relics of ancient architecture are those found at Elephanta in the harbor of Bombay, and at Ellora, inland from Bombay, already referred to in the history of Asiatic sculpture.[1] Near the landing on the island stand the remains of a colossal elephant thirteen feet long, cut from a dark rock, at once suggesting the name of the Island and the home of this gigantic animal. Climbing about half way up a steep hill-side some distance back from the shore, a spacious entrance to a rock-hewn temple opens sixty feet wide, eighteen feet high, supported by two columns *in antis*, with two pilasters behind them. Entering, a grand hall one hundred and twenty-three feet wide and one hundred and thirty feet long is found cut into the solid rock, with rows of huge columns left by the architect to support the roof. Opposite the entrance is the three-headed Deity, Brahma, Vishnoo and Siva already described; while within numerous statues of Siva are carved, and the walls are smoothed into panels or compartments covered with sculptures in relief of mythological subjects. At Ellora a line of similarly excavated temples run along a mile and a half on a hill-side; there being from twenty to thirty in number, most of which are one hundred feet in depth. One of these differs from the rest in having its roof cut high into the rock, sloping upward to the height of ninety-five feet in the style of Indian pagodas. In penetrating to this inner shrine the visitor first passes through a portico supported by massive columns, behind which are statues; he next enters a hall called the chapel whose excavated roof allows two obelisks sixty feet high to

[1] Book III. chap. ii. sect. 5.

stand in it, while its space is partly occupied by two gigantic elephants and numerous statues; yet beyond which is the grand pagoda just mentioned. Statues of deities line these three halls, and the walls are covered with sculptures of mythological incidents, with lions, tigers, elephants, and other animals of the country. The entire structure, though like the Egyptian in massiveness, is quite unlike to that type in its sculptures; while its high conical vaulted roof varies from the Pyramid, as does the pagoda, in having a rounded dome-like instead of a triangular sided peak.

In farther India, or Burmah, the pagoda, so favorite a style of sacred architecture in all Southern and Western Asia, is found in its grandest type. The pagoda is a steep-sided cone or pyramid in shape, composed of numerous stories, built one over the other, each as they rise falling back of the one next below about one-half or two-thirds the distance of its own height; the projecting portions of each descending stage having covered balconies running around the structure, the columns of each of which balconies rest on the back wall of the one projecting before it next below. The Burmese pagodas are generally square, sloping upwards in back-sett stages, like the steps of the Egyptian Pyramid when its facing stones are removed, resembling the Pyramid of Sakkhara. The proportionate height as compared with the breadth of base, is much greater than in the Pyramid which gives a steeper slope. One at Ava the old capital of Burmah, is one hundred and sixty feet high with a base two hundred and thirty-six feet in diameter; while another in Pegu is three hundred and sixty-one feet high, and its base only three hundred and ninety-five feet broad. The former has in the colonnade of its first stage eight hundred and two columns of sandstone, each five feet high.

In China, the houses of the common people are small, low, and crowded together; as in modern India they now are, and as doubtless they were in ancient Egyptian towns. The interesting peculiarity of the Chinese houses is the bell-shaped flare of their curved roofs in the style of a tent with pavilioned covering. Granite is the favorite building stone for larger structures, the marble of China being of coarse texture; while brick forms a considerable portion of their larger buildings. The pagoda is in China, as in India, the structure on which architectural taste is expended. The most noted is the famous porcelain tower, so called, built at Nanking between the years A. D. 1412 and 1431; which unfortunately was destroyed in 1856 during the sack of the city by the revolutionary leader,

Thai-p'hing. This pagoda was octagonal in form, two hundred and thirty-six feet high, built of brick, and then covered with plates of porcelain. From its spire and projecting balconies forty-four bells of sweet tone suspended by chains, kept up a musical chime as they swung with the wind. The Chinese wall is the wonder of this land as a specimen of massive building. It was built along a line of nearly one thousand five hundred miles in extent, being originally designed as a defence from the Tartars. Its foundations were generally of granite, and its upper portions often of softer stone and of brick. It was sufficiently broad for six horsemen to ride abreast on its summit; it rose from fifteen to thirty feet in height, varying with the shape of the ground; and was dotted with towers rising from fifteen to twenty feet above the wall.

In the Islands of the Pacific, Ellis and others have found in ancient relics of architecture what they regarded striking resemblances to the style of Burmah and Egypt. In the island called Atchura is a pyramid with an oblong base and apex; its height being fifty feet, its base two hundred and seventy feet long and ninety-four wide, while its apex is tapered to one hundred and eighty feet long and six feet wide. In the island of Tonga Taboo is a tomb built of immense stones which must have been brought in floats from another island. Other islands have similar relics. In ancient America the researches of Humboldt, and more lately of Stephens, reveal a decided resemblance between the ancient remains of massive architecture here found and those of Egypt. Humboldt speaks of them as of a style of building which seems in Asia to indicate the very dawn of civilization. These edifices were all of the same form, though of different dimensions; they were pyramids with several terraces, whose sides stood exactly in the direction of the meridian and of the parallel of the place. The *teocalli*, or shrines of the deities, were raised in the midst of a square walled enclosure; which, somewhat like the *peribolos* of the Greeks, contained gardens, fountains, the dwellings of the priests and sometimes arsenals; since each house of a Mexican divinity, like the ancient temple of Baal-Berith,[1] taken by Abimelech, was a strong place. A great stair-case led to the top of the truncated pyramid; and on the summit of the platform were one or two chapels, built like towers, which contained the colossal idols of the divinity to whom the teocalli was dedicated. Humboldt then notices the pyramid of Cholula having a base one thousand four hundred and twenty-six feet

[1] See Judg. ix. 46–52.

broad, four times as large as that of Cheops, and one hundred and sixty-two feet high, with four stories; two pyramids of Teotihuacan, the path to which is called Micoatl, the path to the dead; one of which is six hundred and seventy-six feet broad at base, and one hundred and eighty feet high, and another one hundred and forty-five feet high. These truncated pyramids he compares with the terraces of that at Sakkhara, Egypt; and he cites the "hieroglyphical sculpture" covering the steps, as another feature of resemblance. Humboldt regarded the pyramids of Peru, as so like in style to those of Egypt, that they must have been built by a people who had been affected either directly, or indirectly by the culture of Egypt. At Copan, standing in a fertile valley in ancient times in Honduras, Stephens traced the outline of a fortress-like structure whose perpendicular front wall along the river side was six hundred and twenty-four feet long, rising from sixty to ninety feet in height; whose side and back walls rose in pyramidal style with retiring steps, reaching a height varying from thirty to one hundred and forty feet above the debris; the whole being built of roughly hewn stone. These architectural peculiarities united to those of its sculpture reminded the explorer constantly of his previous researches in Egypt.

Sect. 8. The Architecture of Arabia, Palestine, Syria, Assyria, and Persepolis; the advancing phase of the massive style.

As intimated in tracing the progress of the art of sculpture, so in following up the history of architecture in the countries on the eastern borders of the Mediterranean, the successive influence of the many cultured nations, which have here in different ages held sway, is to be carefully discriminated.

Passing from Egypt into the peninsula of Mt. Sinai, tombs are constantly observed during four or five days of travel cut into the mountain sides by the Egyptians, having on their portals the hieroglyphics of their kings, and precisely resembling those of Egypt itself; this people, who sought immortality for the soul by careful preservation of the body, having come to these undisturbed mountain glens for the greater security of their buried dead. Going farther into Arabia Petræa, the rock city of Petra reveals many indications that an influence came from Egypt to shape the style of architecture. The massive proportions of the rock-hewn temple front, the flat roof of the larger temple and the pyramidal roof-peak of other temples, are unmistakable marks of early Egyptian taste.

As is evident from sacred, as well as secular history, long before

the occupation of the eastern border of the Mediterranean by the Hebrews, this section of country had been filled with sacred edifices. Jacob, the ancestor of this people, reared a "pillar" at the grave of his favorite wife; and also built a rude sacred pile, which he called *Bethel*,[1] or house of God, and which able antiquaries suppose to have been copied as far west as the British Isles in structures like that of Stonehenge, named by the ancient Celts Bothel. The temples of Baal in the centre of the land afterwards occupied by the Israelitish tribes, of Ashtaroth in the north, and of Dagon in the South, were immense structures, with flat roofs accommodating thousands, spacious enough to be a reservoir for the offal of a city when destroyed and desecrated by the conquerors; they had massive porticoes and supporting columns sustaining their roofs, underneath which votive offerings were suspended;[2] and these temples Lucian says "the Phœnicians built in the Egyptian style, though the people were of Dorian origin."

In the history of Hebrew architecture the temple of Solomon at Jerusalem, built by a Phœnician architect after Egyptian models, is chief in interest. Reared on the little conical peak between Mount Zion and Mount Olivet called Moriah, as the narrow summit did not furnish space for the wide court of an Egyptian temple, Solomon built an embanking wall around the base of the hill, which rising from sixty to one hundred feet, enclosed an area one-fourth of a mile square. Into the broad deep space between the hill-side and this surrounding wall, large arched passages and side chambers were built, over which earth was heaped up to the level of the hill summit; forming thus an open level area above one-fourth of a mile square. This area, in time, was covered with a green sward on which cattle could browze, and with trees which furnished a shade for the thousands of people that thronged there.

Near the centre of this area stood the temple structure; which was sixty cubits or ninety feet long, twenty cubits or thirty feet broad, and thirty cubits or forty-five feet high. In front of the main building was a portico twenty cubits or thirty feet long, corresponding with the breadth of the house, and projecting ten cubits or fifteen feet in width before the house. This portico and the tower above it rose one hundred and twenty cubits or one hundred and eighty feet in

[1] See Gen. xxviii. 18; xxxv. 7, 14, compare Deut. xxvii. 2, 6, 8, and Josh. v. 20; viii. 30, 32.

[2] See Judg. vi. 25; xvi. 25–30; 1 Sam. v. 2–5; xxxi. 10; 2 Kings x. 25–28.

height; and the porch was supported by two columns cast in brass whose height was eighteen cubits or twenty-seven feet, and their circumference twelve cubits or eighteen feet, giving a diameter of about six feet. The shaft of these columns was surmounted by an elaborately carved capital five cubits or seven and a-half feet in entire height; four cubits of the lower portion of the capital being covered with carved "lily work," while the other cubit was adorned with rows of pomegranates, the reverse of the bell or pear in shape, two hundred in number being clustered upon each capital. Behind the main building, and connected to it was "the oracle," or "holy of holies," having the equal proportions of twenty cubits in length, breadth, and height. The doors, floors, and ceilings were of cedar, fir, and olive woods; and the entire inner surface of the holy of holies, as well as of many portions of the larger house, was overlaid with gold.

The sides of the main building had wings, or lateral projections, built up to and morticed into its walls; and these were divided into chambers three stories in height. At some distance from the main building and around it, a large area or court-yard was enclosed by walls built of three courses of hewn stone or about fifteen feet in height, against which wall-covered rooms and open colonnades with supporting columns were built; this inner area thus enclosed being the "Court of the Israelites." Around the outer wall also of the main area, colonnades looking inward also ran; this outer and larger space being the "Court of the Gentiles." The rooms on the walls of the temple were for the officiating priests, and for the purposes of a "College," in which were gathered the young pupils called "sons of the prophets;" while the colonnades were places of resort for promenade and for social converse.

In the architectural decorations of the Hebrew temple, as well as in its sculpture already considered, we find the idea of the Egyptian architect, modified by the introduction of the palm-tree, the pomegranate, and the cherubim which were Jewish conceptions. The tombs, too, about Jerusalem present the same general characteristics. Thus the tomb of Zacharias, cut from the solid rock, is a cubical base about twenty feet in length, breadth, and height, and capped by a pyramid about twelve feet high. The temples and other structures of Syria both in the North and South of the country have the same fundamental characteristics.

It should be remembered that the temple rebuilt by Ezra about B. C. 520, was substantially that of Solomon so far as style was concerned; while the magnificent edifice reared by Herod the Great

about B. C. 16, while in the main after the old model, and perhaps enclosing the older shrine in its added superstructures, was Roman in its columnar decorations; features belonging to the later age yet to be noticed. The essential point to be observed is, that in their original structure Syrian edifices were Egyptian in idea, but in execution more subject to improvement introduced by superior European races. This characteristic is specially manifest in the ruins of Baalbek, most commanding for the massiveness of material employed in their structure. The city is probably the Baal-Gad mentioned by Joshua,[1] situated in the valley between the Lebanon ranges near the foot of Mt. Hermon. The remains are of three ages; the immense foundations of the great temple which are of most ancient origin; the ruins of three or four porticoes and colonnades which are of the later Greek Corinthian; and a small octagonal structure of yet later times, evidently of Roman structure. In the foundation are rows of stones larger than in any known structure; three of these being sixty-three or sixty-four feet long, twelve feet wide, and twelve feet thick, all of which were raised twenty feet from the ground, and built into the wall of the temple. The relation of these remains to the Egyptian type is indicated by the distinctive emblem of the winged globe with encircling asps sculptured on its walls.

Passing eastward to the Euphrates and thence up the valley of this great river, and along its tributaries into Persia, a line of architectural remains kindred to their sculptured ornaments already considered, fixed in their general form yet improving in ornamental finish may be traced. The description of Babylon given by Grecian and Roman writers, sixty miles in circumference, having in it a single palace six miles in circuit, within which were successive enclosures with embattled walls, towers, and gate-ways, give precisely the picture of Thebes and its palace-temple called Karnac; while the excavations of Layard reveal the same general internal as well as external structure. Turning northward, again, to Persepolis, where Persian art controlled the form as well as finish of architecture, the massiveness of the Egyptian is found united to almost Grecian grace. Fergusson[1] has no hesitation in affirming that the Greek architects borrowed the Ionic capital, first used by them in Asia Minor, from the Persians; as they also obtained from the same source "the graceful ornament commonly called the honey-suckle," which was so extensively used in Greece. On the other hand, he

[1] Joshua xi. 17; xii. 7; xiii. 5.

remarks, that in Assyrian structures invested with a sacred character, the lotus, or lily, was used as an alternating ornament upon cornices. The Old Testament reader will mark the Egyptian characteristic of the pylon or gate-way alluded to by the prophet Isaiah in foretelling the Persian conquest of Babylon.[1]

CHAPTER III.

GRECIAN ARCHITECTURE; CHARACTERIZED BY MATHEMATICAL EXACTNESS IN FORMS AND DELICATE GRACE IN ADORNMENT.

The massive structures reared by the Egyptians showed a general knowledge of mathematical laws which control relations of parts and give shape to figures as a whole. The Greeks themselves professed to have derived from the Egyptian wise men the genius of their knowledge both of Geometry and Astronomy. But the rudiments of that science, which with Egyptian sages was only the foundation of an art for the annual re-measurement of their field boundaries whose land-marks were every year swept away by the Nile's inundation, and of fixing as crudely by the change of the earth's place among the stars in its yearly revolution the recurrence of seed-time and harvest, of festivals and dates important in history and jurisprudence, became in the mind of such a pupil as Pythagoras the perfected measurement of the curves of the conic sections, and the fixing of the sun as the centre of a system of planets with orbits harmoniously proportioned in diameter. The nicety of this perfected exact science entered into the work of Greek artists; and every straight line in architecture, as every curved line in sculpture, was calculated and executed with the rarest precision.

As the peculiar characteristic of the Greeks in sculpture, when compared with the Egyptian, was the giving of life and expression, and the embodiment of manifest motion, so his peculiar genius and culture begat within the Greek architect a yearning to attain in architecture an ideal beauty with which Egyptian grossness was at war. This native temperament conspiring with favoring external causes, such as the nature of their country, and the fineness of their

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[1] Isa. xlv. 1, 2.

material for works of art, made the creations of the Greeks in temple architecture as full of life as was the statue in the enclosed shrine; so that the architect spoke as intelligibly as the sculptor.

Sect. 1. The Influence of face of Country and climate in giving character to the general cast of Grecian Architecture.

The Egyptian cities were built upon plains with walls of coarse lime-stone and sand-stone brought from the Desert range a few miles distant from their river. The Greeks lived in a mountain region; their citadels were perched on rocky promontories jutting up precipitously from the plain, as the Acropolis of Athens and Corinth; and their temples were separate structures, either sheltered in the guarded Acropolis enclosure, or nestled unguarded on the plain below. Standing thus unenclosed, unlike the Egyptian temple which had but one approach, they were finished on all sides alike, having columns extending entirely around the shrine. Their roofs were not flat, as in the land of "no rain," but sloped gently from the centre to the sides. They rose to a small height, and had neither tower, obelisk, or lofty pylon, since they were sufficiently conspicuous on the rocky heights made to serve as their pedestal.

The chief charm of the Grecian temple was its gable entrance portico at each end, adorned with either a single or double row of graceful columns surmounted by coping stones forming a uniting beam or crown running along their top; above which rose the roof-peak sloping gently upward, in whose tympanum or ear-like recess was grouped the most elaborate sculpture.

Of these features, Athens furnished the complete exhibition in three of its world-famed temples. On the rocky height of the Acropolis stood the Parthenon; with only its tympanum and the caps and cornice of its portico appearing above the low fortress walls; the most perfect specimen of the Doric or most ancient order. The temple of Theseus, the chaste and complete embodiment of the second or Ionic order sat like a bird spreading her wings over her young upon a gentle knoll rising between the Acropolis and the Piraeus. Lastly upon the level plain under the Acropolis, and towards Hymettus was nestled the more gorgeous temple of Jupiter, a monument of the last or Corinthian order.

Sect. 2. The Material used by Grecian Architects as affording facility for finish in their work.

In nothing is the contrast between Egyptian and Grecian art more

manifest than in the character of the material furnished to their hand in their several native homes. Both wrought in stone; but while the Egyptian used an impure, uncrystaline and grayish limestone for the erection of pyramids and for the foundation of temples, a soft yellow sandstone for temple walls, and a coarse-grained and reddish granite for statues, obelisks, and inner shrines, everything wrought by the Grecian architect was of the purest and finest white marble. It is doubtless true of the fine, as it is of the useful arts, that the convenience of securing material suggests and prompts the idea of its use. As the rude natives of Central Africa make sword hilts of ivory and ebony, and toy-baskets of rushes, as the Arabs on the Red Sea make broad ornaments for the breast of mother-of-pearl, and the Islanders of the Pacific work beads of coral, so the artists of Greece and Italy formed their laws of taste in conformity to the delicate texture of their marble. The neighboring quarries of Pentelicus and Hymettus, close by Athens, gave a peculiar spring to Athenian genius; or centred the gathering of Grecian artists at this point; while the abundance of the finest statuary marble in almost every section, both of Greece and of Italy, gave tone to their architecture as to their sculpture.

Sect. 3. Early development of the peculiar ideal of Grecian Architecture.

The style of Grecian architecture, as well as sculpture, was an original and national conception and creation. Herodotus says, indeed, that "the first gods adored in Greece came from Egypt;"[1] yet the statues of Dædalus were instinct with life and action in distinction from the mummy-like forms executed by Egyptian sculptors. Pliny, too, speaking of the labyrinth of Crete, says that Dædalus who was the first great architect, as well as sculptor of Greece, "closely imitated in this structure the celebrated labyrinth of Egypt;" yet the earliest temples executed by Grecian architects were as distinct in their type as those of the day of Phidias.

The beautiful and romantically situated temple of Jupiter Panhellenicos is one of the oldest and best preserved specimens of ancient Grecian architecture; and it is a monument of the early perfection of the true Grecian ideal in this department of art. It stands on the elevated eastern shore of the Island of Egina, some twenty miles south of the Piræus, or port of Athens, at a point

[1] Herodot. II. 50.

which commands a panoramic view of Greece; the promontory of Sunium rising over the sea at the southeast; Athens, Thebes, Salamis, with the mountains of Macedon towering beyond at the north; Corinth just visible at the west; and the mountains of Argos in the distance at the south. It is certainly one of the oldest temples of Greece; and is accredited by Pausanias before the Trojan war. Its columns are of the oldest and most massive order; six on each end, and twelve including the corner ones on each side, making in all thirty-two; all of which, except four, still stand with their architraves above resting upon them. The wonderful preservation of such an isolated and entirely unguarded structure seems a striking comment on the reverence man pays to religion separated from the state, and to its shrines when used purely for religious devotion. It is a precious and speaking relic for the lover of art, bearing testimony to the early spring of a pure taste in Grecian architecture.

Sect. 4. The ideas originating the three orders of Grecian Columnar Architecture.

While the general characteristics of architectural works still preserved in Greece are perfectly uniform in all their main features from the earliest ages, three distinct orders of columns of different proportions, and more or less elaborate in the carvings of their capitols have existed in Grecian columnar architecture. These orders have little or no relation to the advance of genuine taste and skill in Greece; since the three are all found in the same age at Athens; while the purest, the most truly immortal specimen of Grecian architecture, the Parthenon, is of the oldest, or more properly most massive order. The three orders are the Doric, Ionic, and Corinthian; whose general features and ideas are thus concisely, as well as beautifully presented by Thomson in his poem on Liberty:

> "*First* unadorned
> And nobly plain, the *manly Doric* rose;
> Th' *Ionic* then, with decent *matron* grace
> Her airy pillars heaved; luxuriant, last
> The rich *Corinthian* spread her *wanton* wreath."

The proportions of the man, matron, and maid, thus hinted, received only comparative exactness among the ancients who built cabins of the unhewn trunks of trees. In the Greek colonies of Asia Minor to the eastward of Greece, whose people surpassed even those of the mother country in art and science, the Doric order received its fixed proportions, those of the figure of man, whose

height is six times the measure of his foot or lower base; and its name Doric was derived from the ancient Greek colonists called Dorians, who made the shores of Asia over against Greece famous by such structures as the world-renowned temple of Diana at Ephesus. Of the principle entering into the proportions of this column Vitruvius says:[1] "They sought that medium which should make these columns sufficiently strong to sustain the front of the edifice, and at the same time should render them agreeable to the view. In order to do this they took the measure of the foot of man, which is the sixth part of his *height;* upon which measure they formed the height of their column." "Thus the Doric column was first introduced into edifices having the proportions as to strength and beauty of a man." In his letters, Michel Angelo says: "It is a matter certain that the members of architecture depend on the members of man."[2] The Ionic column is so called, because it originated as Vitruvius records in the Ionian Islands on the west of Greece. Its proper proportions are a height equal to eight diameters of its lower base. Vitruvius states, moreover, that this order received its modulus from the female figure, whose foot, more delicate than man's, is but one-eighth of her height; and he adds the following in illustration of the principle which originated the Ionic order. "They sought to introduce a new order of columns by giving to them the proportions of the female figure; and that they might be emblematical of female delicacy, the height of the columns was eight times the lowest diameter. Bases also were given them in imitation of sandals, and volutes were sculptured in the capitals in allusion to the ringlets which fell down on either side of the face." "And thus" he continues "were two species of orders invented; one representing the strength and simplicity of man; the other the fine proportions and the elegance of woman."

The Corinthian column originated as its name indicates at Corinth; the "lumen Græciæ," or "eye of Greece," as the Romans called it. The proportions of the shaft in this order vary from eight to ten diameters of the lower part of the shaft as the measure of its height. The capital is the special characteristic of the order. It is modelled as Vitruvius states, in its proportions and ornamentation after the figure of the young female just arrived at maturity; whose form is

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[1] Vitruvius Cic. Archit. Sect. IV. Chap. 1.

[2] Mich. Ang. Let. 17, "E cosa certa, che le membra dell' architettura dipendono dalle membre dell' uomo."

more slender, and whose person is more appropriately ornamented than the matron's. A confirmation of the general idea entering into the three orders of Architecture, is found in Vitruvius' statement as to the suggestion of the Corinthian order to Callimachus, the worthy compeer of Phidias, who was employed not only at Athens, but by the rival city of Corinth in the adornment of their Acropolis. "A virgin of Corinth just as she had attained to a marriageable state was attacked by a disorder whose effects proved fatal. After her interment, the vases which were the objects of her admiration when alive were collected by her nurse and deposited in a basket, which she placed upon the grave, after covering it with a tile to protect it from the weather. The basket was accidentally placed over the roots of an acanthus. The natural growth of the plant being turned aside by the pressure upon it, the middle leaf and the cauliculi appeared in the spring around the bottom of the basket. The cauliculi attaching themselves to the external surface grew upwards until their progress was arrested by the angles of the tile projecting over the basket, which caused them to incline forwards and assume a spiral form. At this stage of its growth, Callimachus, who from his great genius and talent for sculpture was called *Catatechnos* by the Athenians, chancing to pass by the spot, observed the basket and the beauty of the young foliage about it. Pleased with its fanciful and novel appearance, he adopted it in the columns which he afterwards employed in the edifices of Corinth, having first instituted laws for the proportions of the order, which was thence called Corinthian." To a certain class of students in art this statement of Vitruvius has semed a mere conceit; as have the traditions recorded by Herodotus the historian of Egypt and of Plutarch the biographer of Grecian and Roman heroes to many students of History, and as has the suggestion of the falling apple to Newton, and the theory of Aristotle as to motion to a kindred class of students in Natural Science. A more comprehensive and careful scholarship however makes the works of such minds as Herodotus and Aristotle, and of Vitruvius and Plutarch, to be more appreciated both for the facts they recorded and the conclusions they have deduced from the facts they witnessed.

Sect. 5. The Three Grecian orders as comprehensive types of true Proportion and Adornment in every age and class of Architecture.

As the master-pieces of Grecian sculpture because of their perfection as ideals have been models for all time, so are the three orders

of Grecian columnar architecture, because of their exhaustive analysis, comprehensive types for the successful study of all succeeding architectural works. The proportions of the male and female human form adopted in all ages as the model for Divine beings, and thus recognized as perfect in art may vary in actual stature, breadth and length of limb; as the Laplanders are low, the English corpulent, and the Arab from deceiving fulness in dress short-limbed. Yet, as the Greeks believed there is a *canon*, or rule of perfection in the proportion of human frames taken as models both in statuary and architectural adornment, so there are types of universal truth and beauty, allowing on the one hand wide variety in pure Grecian buildings, and restricting on the other hand architects in every class of structures; which types the Greeks believed they had embodied in their first orders.

There are important restrictive principles inherent in the three orders of columnar architecture as executed by the Greeks which must be guides in the executing or the criticizing of architectural works of any age or class. In many ancient and more modern structures no columns are introduced; yet the proportions belonging to porticoes of different orders of columns, and to each individual column, are indications of laws of symmetry for unadorned structures; just as a robed statue must conform to the symmetry of the nude. When introduced, moreover, these orders should control the architect not as arbitrarily fixed standards to be mechanically copied; but as embodying all the principles in nature which can enter into the architect's designs; an idea which has been ably developed in Oral Lectures by T. U. Walter, LL. D., the American architect.

As the letters of the alphabet were nearly complete among the Greeks and Romans, as the tones in the musical scale were in the earliest times all discovered and fixed so that there can be neither more nor less of these tones in number, nor any combination of them essentially new, and as, yet again, the elements of the physical world and of man's intellectual and moral nature when analyzed have in every age been seen to be the same, so in the principles of columnar architecture the Grecian artists reached an exhaustive analysis which allows no additional type to be conceived. As, however, in language, music, physics and metaphysics, there may be a new study of details, and new arrangement of parts, so in architecture there may be new groupings of previously recognized harmonies, and an introduction of new emblems selected from the productions of different climes.

The Greeks themselves have left no two specimens even of the same order alike in all their parts; the number, proportions and adornment of columns being always varied with the use, the location, the size, and the general surroundings of the structure. Thus the Doric or robust order has at Pæstum in Italy four diameters as its modulus, and the portico of the Agora at Athens six; while in the monument of Lysicrates, and the tower of Andromicus, the foliated ornaments of the Corinthian capitals belong to flowers most unlike. Moreover, as we shall see in its place, the so-called Tuscan order is but a modification of the Doric, and the Composite a similar modification of the Corinthian; both having originated in the less chastened taste of the Romans. Even in the Gothic we shall find that artists succeeded just so far as they recognized the *canon* of Proportion established by the Greeks in their orders; while the revived Grecian of Michel Angelo, now the ruling type in all great works of modern architecture, settles the principle so far as the decisions of the greatest artists can establish it.

This, their own *canon*, guided the ablest Greek artists, who were the master spirits controlling mere Grecian builders placed under them. Thus in the Parthenon elevated on the Acropolis, where the Robust order seemed to be demanded because it was to be seen at such a distance that the finer ornaments would be lost, the Doric order was used by Phidias; while in the sheltered vale below stands the temple of Jupiter situated so as only to be seen near at hand, and therefore finished with the slighter proportions and more elaborate ornament of the Corinthian. The same principle of adaptation has led American architects to give to the porticoes of the former U. S. Bank in Philadelphia, to the Custom House at New York, and to the Patent Office at Washington, the two latter modelled directly after the Parthenon, the form of the plain and massive Doric, because those attributes seemed adapted to the business purpose for which they were constructed. This same principle belonging to the new orders has led the Architect of the Girard College, that finest specimen of Grecian architecture in America, modelled though it is after the Doric Parthenon, to select the elaborate Corinthian capital in a building seen only close at hand and on a plain, whose richness may typify the bounty of the founder, and its grace the charity that prompted this gift of Humanity and of Art; while in the U. S. Capitol, designed to be the gathering place, the Union Hall, for men of all the States, the same artist has inwrought into the ornaments of Corinthian capitals, the corn of the Northern Sec-

tions, the tobacco of the Middle Latitudes, and the cotton of the Gulf States.

SECT. 6. THE ARRANGEMENT OF COLUMNS, WITH THEIR INTERCOLUMNIATIONS ON WHICH THE DESIGNATION OF STYLES IN GRECIAN ARCHITECTURE IS FOUNDED.

The true dimensions of a Greek temple, according to Vitruvius[1] are that its width should be half its length. Temples may have one or more rows of columns; these columns may be placed only in front, or both in front and in rear, or on all four sides of the temple; and they may be differently arranged and bestowed as to their number and the width of spaces between them. According to their varied modification in the columnar arrangements thus hinted, the style of the edifice is determined; the word style being derived from the Greek *stylos*, a pillar or column.

According to the adjustment as constituent parts of the building which columns are made to assume, temples are divided in the following manner. The simplest is the temple *in antis*, from the Greek word *anti*, before; the end of the edifice forming its front, and only a recess being left in the centre for columns; in which usually one pair, sometimes two pairs may be made to stand. The second class has a portico in front alone; and is called *pro-style;* the third has a portico at both ends, and is named *amphi-style;* and the fourth has a colonnade on all sides and is termed *peri-style;* these names being successively derived from the Greek prepositions *pro*, *amphi*, and *peri*, with the noun *stylos*. According, again, to the intervening distances of the columns, called *intercolumniation*, there are five different styles. Those having their columns one and one-half diameters apart are named *pycnostyle*, or close set, from *pycnos*, the clenched fist; those two diameters apart *systyle*, or near-set, from *syn* together; those two and one-half diameters *eustyle*, or well-set, from *eu*, well or beautifully; those three diameters *diastyle*, or open-set, from *dia*, through or between; and those four diameters *areostyle*, or wide-set, from *araios*, broad. According, once again, to the *number* of columns in the front row of the portico, temples were designated *tetrastyle*, *hexa-style*, *octostyle*, etc., *i. e.* four-columned, six-columned, eight-columned, etc.

The names derived from the words *pteros*, a wing, and properly applied to circular buildings or edifices with wings after the later

[1] Civ. Archit., Sect. I., Chap. 4.

Roman style, originated among the Romans, and by them were also applied even to Grecian buildings; not only to their edifices with wings, such as the agora or market, but also to rectangular temples having no wings proper. A temple having a single row of columns on all sides was called *monopteral*, or single-winged; one having two rows on all sides was named *dipteral* or double-winged; and one having one row of columns and a corresponding row of pilasters, or half-columns fastened upon and projecting from the sides of the building was called *pseudo-dipteral*, or false double-winged.

A temple having an open or unroofed centre was called *hypæthral*, from *upo*, under, and *aithēr*, the air. All these varied classifications, giving evidence of that thorough study and that comprehensive generalization which characterize the reductions of thorough science, are just indices of the exhaustive analysis to which the Greeks had subjected every department of science and art; as well as the practical skill with which the Romans, learning from the Greeks used their applications to architecture.

Sect. 7. The several parts of the Greek Temple and their finish, conspiring to give its characteristic grace to Grecian Architecture.

Approaching now any one of the numberless Greek temples, we find everywhere a unity amid the variety to which the many styles and orders mentioned give rise. There are three parts of every structure in any style of architecture, and in a pure Grecian edifice of which the temple is the just type a fourth, whose technical character and expression have been adopted for all time, and have been applied to every variety of architecture. These three portions are the *columns* with their parts; the *entablature*, or table resting upon and uniting the columns; and the *pediment*, or angle of the roof whose slanting sides rest as with two feet upon the entablature: to which must be added the *platform*, or surrounding ground-steps.

The main parts of the column are the *base* or foot, the *shaft* or body, and the *capital* or head. The base of the columns is either square or round; if perfectly plain it is a square plinth; if carved, it is necessarily rounded. The Doric column has properly no base; the Ionic base is a rounded and slightly projecting foot; the Corinthian, though it allows more elaborate workmanship, yet even in the most gorgeous specimens of this most elegant order admits no projecting ornament against which the foot of the passer-by might strike.

The form of the shaft is a striking specimen of the science which lay at the foundation of the Greek's idea of beauty. The idea that the curve is the line of beauty, was carried out in their architecture as in nature. As there is not in the vertical or upward lines of nature a right line, as the taper of the hillock, the mountain-peak, and even of the granite crag and pinnacle, assumes from the wear of the elements a rounded line of elevation, as well as of horizontal circuit, as the tree-top and trunk are never straight cones, but curves of hyperbolic or parabolic form, so all the uprights in Grecian architecture have a curve, so slight, indeed, that like that of the tree it denies its reality to the ordinary eye, but yet reveals itself to the searching analysis of the architect's measuring gauge. The measure, or *modulus* of the column, and indeed of all portions of the entire Grecian temple are taken from the lower diameter of the shaft, as Vitruvius teaches. For accurate proportioning the radius or half-diameter was made the module; and this was subdivided into sixty minutes, or equal minute parts. By application of this nice measure to the shaft of the column at different successive heights, passing from the base upward, it will be found to taper not in a straight slope, but in a parabolic curve.

The *fluting* of the shaft may have had a subordinate end relating to the idea of utility; but it had the higher end of artistic beauty and of scientific skill. The flute is the concave of the reed; so named from the wind instrument made from the reed and called flute. The Doric and the Ionic columns may be left unfluted; or they may be fluted only at the top, leaving the space at the bottom up to which the nice edges of the fluting might be exposed to injury an unbroken cylinder. When fluted, the grooves of the Doric are made to meet each other, leaving only a sharp intervening edge. In the Ionic, the flutes are set farther apart, or have a cavity of sharper curvature, leaving a narrow fillet or central band running up and down between the flutes. The Corinthian column is always fluted; its flute being separated as in the Ionic by fillets or bands. Vitruvius refers to Homer's mention,[1] that when Minerva entered the hall of Ulysses, "she leaned her spear against the tall column within the polished railing, wherein were many others;" and he suggests that the flutes of columns in the porticoes of palaces and temples were originally designed as supports against which the warrior might lean his spear as he left it outside the edifice. The reasoning of Vitruvius after-

[1] Homer, Odyssey, I. 127.

wards, shows that as in the early suggestions of rude men about the proportions of columns, at first derived from tree-trunks, but in advanced times modeled after the studied proportions of the human figure, the most perfect of the Creator's works, so this simple use to which flutes might be put by the warrior, was subordinate to the artist's idea of magnifying the apparent dimensions of columns, as well as of adding to the grace of their outline.

The extent to which philosophic study was carried by Grecian architects in their works is illustrated by the following statements of Vitruvius,[1] as to the adjustment of the diameters of columns to the laws of perspective, of optics, and of proportion. "The columns at the angles of buildings should have their diameters enlarged by a fiftieth part, because being from their situation more immediately contrasted with the light, they hence appear less than the others. The deception to which the sight is liable should be counteracted by means suggested by the faculty of reasoning." "The diminution of the shaft in its taper from the top to the bottom is to be thus regulated. If the height of the shaft be fifteen feet, the upper diameter should be five-sixths of the lower; if the shaft be from fifteen to twenty feet high, the upper should be eleven-thirteenths of the lower; if thirty feet high, the proportion should be thirteen-fifteenths; if from thirty to forty feet high the diminution should be one-seventh; if from forty to fifty feet high the decrease should be one-eighth." The reason for this diminishing proportion is thus stated. "To the eye the diameter of the column diminishes as its height increases; hence to preserve the same apparent proportion of the diameters it becomes necessary to increase that of the upper portion of the shaft. The eye alone is the judge of beauty; and where a false impression is made upon it through the natural defects of vision, we must correct the apparent want of harmony in the whole by instituting particular proportions in particular parts." "If the width of the temple be more than one-half its length the proportion should be apparently restored thus. Columns should be placed within and opposed to those between the antæ. These should be of correspondent height; but their diameters should be less in the following proportions: if the columns in front be eight times their diameter in height, the inner ones should be nine diameters; if the exterior be nine or ten diameters in height, the interior should preserve a proportionate augmentation. The difference in the bulk of the columns will not be apparent because they

[1] Civ. Archit., Sect. I., Chap. 2.

will not be seen contrasted with the light. If notwithstanding they should appear too slender, the number of flutings should be increased. Thus if the columns in front have twenty-four flutes, the inner ones may have twenty-eight, or even thirty-two; so that what is in fact taken from the bulk may be restored by the additional number of flutings. This optical deception arises from the idea of greater magnitude which is impressed by the transit of the visual rays over a greater surface. For if the peripheries of two circles of equal diameter, one of which is fluted and the other not, be measured by a line which is made to be in contact with every point of the peripheries, the length of the line will not be the same in both cases; because in one it has been made to touch every point in the concave surfaces of the flutings in the intervals between the striæ (or fillets.) Since this deception therefore may be accomplished, it is allowable to make columns which are in confined situations and little exposed to the light less massive than the others, because their want of bulk may be rendered imperceptible by augmenting the number of flutings as circumstances may require."[1]

Passing from these considerations as to the shaft, the *capitals* of Grecian columns present themselves as the next study. There are general characteristics belonging to the capitals of all the three orders. The capital, as the column, has properly three divisions of its parts; an upper and a lower tablet and the moulding between. In the Doric capital the lower tablet is wanting; as the base is wanting in the Doric column. The moulding of the Doric is a plain ovolo; a curve named from its egg shape, and limited in size to a quadrant, whether the curve be a quarter of a circle, of an ellipse, of a hyperbola, or of a parabola. The ovolo of the Doric moulding has always the curve of a parabola, or hyperbola, never of a circle; the design being to reflect light to the eye looking from below in the most perfect manner.

The Ionic moulding consisted of two volutes, or scrolls, representing the curls of hair on each side of the female head; between which was a band, like the fillet worn on the brow of Grecian women, having as pendants from it two egg-shaped ovals, separated by triangular tongues, these pendants seeming to be the ornaments of jewelry strung upon the fillet. In the original Ionic, as employed in the Asiatic provinces of Greece, the capital had but two faces, a front and rear face, while at the side the volutes rounded downward and

[1] Civ. Archit., Sect. I., Chap. 4.

inward like the smooth combed puffs behind the curls of female hair; and the capital thus constructed had a finished character because it was always placed between *antæ* or other columns, and never at a corner. In Greece proper, however, where the Ionic column was used in porticoes, it was necessary for the sake of harmony to give its moulding when standing at a corner, a side, as well as a front face; a modification, as we shall see, still farther extended by the Roman architect.

The moulding of the Corinthian was a bell-shaped basket as a foundation, overlaid with intertwining stalks and leaves of the favorite acanthus, or of some other plant; as of the fern or the olive. The upper points of the leaves and stalks were represented as bent downwards into curls from the resistance of the tablet or tile laid above them; but the pure Grecian was free from the interlarded ovals and stiff curling horns introduced afterwards by the Romans into the Corinthian moulding.

Above the columns the *entablature* is the second study in the Grecian temple. The entablature is to the range of columns what the capital is to the single column; it is the coping or capping of the entire work. The greater or less elaborateness of its finish was made to correspond with that of the columns in the same edifice. The entablature consists of three parts; the architrave, frieze, and cornice.

The *architrave*, from *archē* and *trabs*, or main-beam, is the timber or row of stones laid immediately upon the caps of columns, and uniting them together. It projects slightly in front of the columns, whose capitals are its rests. In the Doric, the architrave is plain; but in the Ionic and Corinthian it is more or less elaborate.

The *frieze*, so called from the verb freeze or frizzle, to be contracted, is the middle and retired member of the entablature; corresponding to the shaft of the column, whose surface is depressed behind its base and capital. The surface of the frieze is divided into compartments, or panels, separated by small squares cut into three perpendicular bars with grooves between, and called triglyphs, or "Doric triglyphs," as originating in the Doric or primitive order.[1] One of these is placed over each column, and one or more between the columns; which squares project in front of the depressed face of the frieze and represent, according to Vitruvius, the projected ends of the rafters in the log cabin after which the Doric order is modeled. The inter-

[1] "Δωρικας τριγλυφας."—Euripides Orestes, 1372.

vening spaces between the triglyphs are called the metopes; from *meta* and *ope*, openings-between. These spaces were originally left open, and hence called *opai;* as is intimated by Euripides,[1] when he represents Pylades as urging Orestes to scale the wall of the Doric temple of Diana, at Tauris, and entering by the opening between the triglyphs to seize and bear off the statue of the goddess. His words are: "When the eye of darkening night shuts in, bringing all our skill to the endeavor, we must hazard the attempt to take the polished image from the temple. The access is between the triglyphs where the open space allows." These openings were afterwards filled with slabs, as in the Parthenon; and being protected by the frame around they were filled with sculpture in relief, so that the metopes of the frieze became one of the richest portions of the entire front of a Grecian temple.

The *cornice,* or corona, is the projecting crown serving as the coping or cap of the entablature. The cornice is divided into its three parts; and these again in elaborate specimens, each into their three subdivisions; this tripartite division of the Greeks being carried into the minutest parts of their work. Underneath the projecting cornice are always to be noted the mutules or square blocks corresponding to the triglyphs over the columns, and having on their face small circular pendants called drops, because representing the rain drops hanging over the triglyphs whose grooves serve as gutters for their descent. In later periods of the history of architecture modillions and brackets take the place of the mutules and triglyphs.

Yet above the entablature, as the third characteristic study of Grecian Architecture, is the *pediment.* The base of the pediment is the upper part of the entablature; the sloping sides of the gable or roof-angle rest upon the cornice, projecting forward even with it and being finished in harmony, if not in perfect uniformity with the cornice. The central triangular space called the tympanum, or drum, set back even with the frieze and offering a deep and sheltered niche for sculpture, was regarded as the feature of the Grecian temples which gave to it a celestial aspect, and made the earthly house a fit residence for heavenly beings. To this effect Cicero remarks, speaking of the "fastigium," or roof-peak of the Capitol at Rome, "This same roof-peak of the Capitol and of other edifices, not grace, but necessity itself constructed. For when the reason of the case had

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(. . . . "εισω τριγλύφων ὅποι κενὸν δέμας καθεῖναι.")—Euripides Iphig. in Tauris, 113.

suggested, how from each side of the house the water should be made to glide, thus securing utility to the temple, the idea of dignity attached to the roof-peak; so that if in heaven a Capitol should be erected, where rain could not occur, it would seem that it would be regarded as not possessing dignity without a roof-peak."[1] Another indication of the philosophic spirit that guided the Greek architect is intimated in the following statement of Vitruvius, as to the forward inclination which was to be given to the entablature and pediment. "All the members placed above the capitals of the columns, as the architrave, frieze, cornice, tympanum, etc., ought to be inclined forward each the twelfth part of its height; since, if a person looking at the face of an edifice conceives that two lines separate from the eye, one of which touches the bottom the other the top of the object of vision, it is certain that which touches the top is the longer; and the farther up one line extends, the more it makes the upper part appear to tip backward; so that if the members which form the face of the upper portion are made to lean a little forward, the whole appears to be perfectly upright and plumb."

It deserves final mention that the platform or steps which form the ascent to the Grecian temple adds greatly to its beauty. Unlike the Egyptian temple the floor of the Grecian temple was raised some feet above the ground; and the broad and easy flight of steps up to that floor, with their slant as graceful as that of the roof-peak, formed as it were a chaste pedestal on which the fair structure stood. In a prostyle temple these steps went up only on one end in front of the one portico; but in a peristyle structure they sloped up with their beautiful slant on all sides. To some eyes this surrounding ascent, admirably illustrated in several specimens at the American capital, is the most charming feature in Greek architecture.

Sect. 8. The Parthenon as the Embodiment of Grecian genius in Architecture.

The Parthenon or temple of Minerva, the Virgin patron of Athens, is perhaps the completest, as it was the most finished specimen of Grecian architecture. Standing as it does on the lofty rock of the Acropolis, in a position where it is exposed to the rudest blasts which sweep over the plains of Attica, its low massy Doric columns when seen in the distance, seem to be happily chosen as the order of its

[1] "Ut, etiamsi in cœlo statueretur, ubi imber esse non posset, nullam sine fastigio dignitatem habiturum fuisse videatur."—Cic. de Orat. L. III. c. xlvi.

architecture; while its graceful roof, sloping upward at an angle of only 14°, one might imagine to have been designed to court the hurrying gales only slightly to kiss its gently inclined face as they slide quickly and easily over it. As the observer draws near the rocky height the temple is lost for awhile to sight; till climbing the steep carriage ascent and passing into the Acropolis enclosure through the Propylæa, an avenue of covered porticoes whose rare beauty forms a fitting entrance to this shrine of Grecian art, the whole peerless structure in one enchanting view breaks on his gaze. The temple stands about two hundred feet back from the Propylæa, about one hundred feet to the right, and raised some twenty feet above the beholder, presenting its southwest corner to his gaze; thus giving the completest view possible, the eye taking in at the same glance its entire length, breadth, and height. It is now sadly shattered and dilapidated, its centre having been torn open by a Venetian bomb A. D. 1687; but the large portion yet standing, together with the particular descriptions of such men as Vitruvius who saw it in the days of the first Roman emperor, and of Sir Geo. Wheeler who visited it as late as A. D. 1676, bring all its glory fresh before the gaze of the modern traveler.

This peerless model is pure Doric; the proportions of its columns being six diameters in height, each having twenty flutes without intervening fillets, no base being introduced, and the moulding of the capital being a simple ovolo. It is peristyle having columns on all sides; and monopteral as the surrounding colonnade is but a single row of columns. It is octo-style, having eight columns in front; and pycno-style, as the intercolumniations are one and a half diameters of the columns. It is hypæthral, having its inner shrine open to the heavens; from whose floor the colossal Minerva lifted her majestic form thirty-eight feet, stretching her spear still upward till its point caught the beams of the morning sun as it rose above Mt. Hymettus, and glanced over the temple wall into the shrine, open as it was to the heavens. The entablature, with the pediment above, was all that genius and art could make it; the architrave plain and chaste; the metopes of the frieze filled with the richest sculpture in relief; the cornice rich though chaste; and the tympanum of the pediment ornamented with the majestic statuary already described.[1] Finally the exquisitely graceful slope of the low graded steps ascending upon

[1] See Book III., Chap. iii., Sect. 4.

all sides to the colonnade of the temple gave a finished air of elevation and stability to the entire structure.

The entire length of the structure was 217 feet and its breadth 98½ feet, thus meeting substantially Vitruvius' suggestion as to the proportions appropriate for a temple. The exact measurements of other principal parts are here given. The lower diameter of the columns 6 feet 1.8 inches; upper diameter 4 feet 9.75 inches; height of the entire column 34 feet 2.8 inches; of the capitals 2 feet 9.9 inches; of the entire entablature 12 feet 1.95 inches; of the architrave 4 feet 5.1 inches; of the frieze 4 feet 5.05 inches; of the cornice 3 feet 3.8 inches; projection from the axis of the column of the abacus 3 feet 3.775 inches; of the architrave 2 feet 10.9 inches; and of the cornice 5 feet 9.125 inches. The intercolumniations were 7 feet 4 inches at the base, and 7 feet 11.5 inches above; varying of course according to the taper and upward slant of the columns.

These minute measurements indicate two general facts which are the embodiments of two fundamental principles. The rigid science which determined the proportions requisite to strength and beauty in Grecian structures were not a fixed mechanical measure or pattern after which the architect or sculptor was to copy; they were hints from nature serving as a model from which genius might draw principles to guide it. As no tree or man has a fixed measure of dimension, either absolute or relative, so no two Grecian edifices are modelled one after another; nor is any one rigidly conformed to any fixed measure. This is strikingly seen in comparing any of the details above given as to the measurements of the Parthenon.

A careful measurement of the columns of the Parthenon reveals the fact that their upward taper is a parabolic curve, so slight however as not to be perceptible to the eye of the observer. The long sweep of the platform on which the foot of the columns of the colonnade rests curves upward, so that the centre of the longest range, or that on the sides of the temple, is elevated twenty inches above the level of the ends of the same range, the centre of the end range or of the platform in front and rear of the temple being correspondently raised; the effect of which is, in conformity with the laws of curvilinear perspective already considered,[1] to give to the eye as it courses over the curved surface the impression of greater extent. Each column is made up of twelve separate blocks of marble, each of which is therefore about three feet high; the outer side of the block, or the

[1] Book II., Chap. ii., Sect. 8.

side most remote from the temple wall, being cut about one inch thicker than the inner side, so as not only to offset the slope of the platform, but to give the column a graceful slant inwards. These blocks have on their faces an inner ring of surface deeply indented; a second and concentric ring more slightly indented; while a third and the outer ring of surface was polished to the most exquisite smoothness and conformity to the face of the block laid upon it. When, now, the blocks were placed one above the other they united so closely and firmly, both from the vacuum in their centre and the perfect contact of the exterior of their faces, that when fluted the junctures escaped the eye; and they became also so welded that they would break at any other point instead of at their juncture, while, too they had an elastic resistance to an earthquake's shock which a column solid throughout could not afford.

To minutely describe every particular of the wonderful science entering into the art of the Grecian architect, would be as endless as was the ever-widening study and ever-growing perfection of the artist himself.

Sect. 9. A Historic Notice of Grecian Architects and of their works till the decline of their Art.

The history of Grecian architecture, as of sculpture, begins with Dædalus, who flourished before the Trojan war. Though an Athenian by birth, his first great labors were in the island of Crete, then under the reign of the famous Minos; whence he visited Sicily, Sardinia, and the coast of Italy. His great works in architecture were a labyrinth and temple in Crete, a river-reservoir, and a mountain-fortress in Sicily, several palaces in Sardinia, and temples of Apollo at Capua and Cannæ, in Southern Italy. The very enumeration of these works indicates that Egyptian ideas of architecture to a considerable extent prevailed; at least, that the distinctive Grecian style was not yet fixed.

The next stage of this history, at a period which cannot be definitely fixed, is that of the introduction of the orders of Greek columnar architecture. To this age belongs the exquisite gem of ancient Grecian architecture already alluded to, the temple called Panhellenicon, on the Island of Egina. The earliest architect expressly mentioned as using the Doric order is Daphnis of Miletum, a port of Asiatic Greece, near to Ephesus; who, aided by Pæonius of Ephesus, erected a temple at Miletum, of the Doric order. As this Pæonius assisted Chersiphron, the architect of the early grand

temple of Diana at Ephesus, which was of the Ionic order, it is evident that these two orders grew up together. The era of these finished architects is apparently as early as the first Olympiad or about B. C. 776.

The era of the discussions as to the propriety of the use of these orders constitutes the next advance in the establishment of Greek styles of architecture. The names of some of the writers on architecture in this age, and their arguments, are preserved by Vitruvius, the architectural critic of the Augustan age. Among them were Tarchesius and Pytheus; the latter of whom contended that the Doric order of columns was not adapted to sacred edifices, "because deceptions and inconsistent proportions are executed in this order." It seems to have become a settled principle among Greek architects that the Ionic was from the characteristic features of its capital properly employed only *in antis*, where its face alone was presented in perspective view; and yet this order was used in full porticoes requiring corner exposures and side views of the capital. During this period probably lived that Hermogenes commended by Vitruvius, both in his architectural works and his other writings, as having greatly contributed to establish correct taste in the early ages of Grecian Architecture.

The culminating era of the Doric, during the rebuilding of Athens under Pericles, beginning about B. C. 450, was the next succeeding, and some would regard it the most advanced stage of Grecian architecture. Phidias was made by Pericles the general superintendent of the extensive work of restoration and rebuilding; but Ictinus, assisted by Callicrates, seems to have been chief among the architects proper. The Parthenon, which was the peerless master-work of all time in the Doric order, seems to have been finished in the eighty-fifth Olympiad, or about B. C. 438, the third year of that Olympiad; since this was the era of the inauguration of the majestic statue of Minerva by Phidias, the chief ornament of the matchless temple. From that era dates the triumphant establishment of that chaste order as the acme to which the highest culture directs the architect, and which the most chastened taste makes the people's choice.

The introduction of the Corinthian order, some years after the age of Phidias and of the triumph of the Doric order, was the last, if not the climactic stage of advance in Grecian architecture. Callimachus, its author, was in the age succeeding Phidias, the comprehensive genius in art. He excelled as a sculptor, an engraver, and

a painter; while he was also an architect. In illustration of his general excellence as an artist, Vitruvius states, that on account of the elegance and finish of his workmanship in marble, he was called by the Athenians "Katatechnos," or *the elaborate*. Of his special invention, the Corinthian order of columns, after relating the incident of the basket and acanthus, which suggested to the artist the idea, the same writer records, "He made columns after this model at Corinth, and from it established laws of symmetry; a model which fixed the distribution of details in the finish of works of the Corinthian order." The earliest introduction of Corinthian columns whose date is fixed, is their employ in the ninety-sixth Olympiad, about B. C. 395, by the artist Scopas, in the porticoes of a temple of Minerva, built at Tegea, in Arcadia. This order which became such a favorite in Greece generally, and in the provinces especially, seems to have been slow in gaining admission into Athens. It was under Antiochus Epiphanes, and through Roman influence, that about B. C. 175, the temple of Jupiter Olympus on the plain under the Acropolis, was erected after the Corinthian order; while the little gem called the Choragic Monument, so exquisite a specimen of the same style, was a work of a still later date.

No single example of Grecian columnar architecture gives a more comprehensive view of the progress of the art among the Greeks than the celebrated Temple of Diana, at Ephesus. The rude wooden image of the goddess, Egyptian in its symbolic devices and Asiatic in its profuse and tawdry decorations, kept its place from the earliest to the latest, hid behind a veil in three successive structures reared as its shrine. The first and rude original edifice alluded to by Pausanias, had probably the characteristics of the Asiatic style in its architecture. The second, of the Ionic order, was begun about 776 B. C., by Chersiphron and his son Metagenes, and was completed by Demetrius, assisted by Pæonius. Built on marshy ground, its foundations were laid in beds of charcoal well rammed; its floor was raised so as to give a surrounding platform of ten steps; its length was four hundred and twenty-five feet, and its breadth two hundred and twenty; its peripteral portico embraced one hundred and twenty-seven columns sixty feet high, and each composed of one block of Parian marble; and their finish was Ionic in its caps and flutes; the doors were of the durable cypress, and the ceiling of cedar; and the whole exterior was enriched with the most costly decorations, and the interior stored with the rarest treasures of art. With no confessed motive but to immortalize himself, a wretch named Herostra-

tus secretly set it on fire, and destroyed all except the blackened walls. In his eastern expedition, Alexander the Great found it in this ruined condition, and directed Dinocrates, the future architect of Alexandria, to rebuild it with more than its former magnificence. Restored and made the treasure-house of the gems of art left by such sculptors as Praxiteles and Scopas, and of such painters as Parrhasius and Apelles, it continued even for ages after the Christian era, one of the glories of the world.

After the time of Alexander, no special notice is found of eminent Greek architects. From that period, however, Greek artists were in foreign employ; and their genius and culture served to adorn structures modeled after inferior standards. In Persia, as in Asia Minor, where the superior Indo-European stock predominated, at a very early day Grecian taste controlled in architecture; as an instance of which we learn, that about B. C. 550, Memnon, a Greek architect, was employed to erect a magnificent palace for Cyrus, the king of Persia, at Ecbatana. In Egypt, on the contrary, the Asiatic taste prevailed; the pagoda-shaped tower of Pharos, built by Sostratus, as we know from the ancient description of the structure, and the beautiful temples on the Isle of Philæ, as we can see in their ruins, being not at all Grecian, except in the superior naturalness of their sculptured devices, and in the purer style of their columnar decorations.

CHAPTER IV.

ROMAN ARCHITECTURE; CHARACTERIZED BY STATELINESS IN DIMENSIONS AND PROFUSE ELEGANCE IN ORNAMENTATION.

While the Greeks lived in the ideal, the Romans were always eminently practical. The tendency of the Greek mind led them in their architecture to make material ends subordinate to spiritual conceptions; but the whole drift of Roman aspiration was to secure in their edifices objects of utility, while they added whatever measure of beauty the design of each would allow. The Greeks ruled the world by their intellectual superiority; and their philosophy and religion gave the animating conception to all their works of art. The Roman ruled by the sword; their State was more to them than

their religion: and as their favorite statues, according to Cicero's mention, were armed warriors, so their edifices, for whatever purpose erected, would answer, should occasion call, for fortresses. It was not to be expected that such a people would excel in the first two Arts of Design; and the Romans had no sculptors or painters that added any excellence to Grecian art. In architecture they were the people to originate new principles, to invent new styles, and to employ new methods.

The first exhibition of Roman genius displayed itself in giving strength to their works. They did not like the Egyptians, aim at mere massiveness; heaping up piles of stone for which no purpose of utility seemed to call; but they sought just that amount of massiveness which strength required, and they showed in the manner of their putting stones together, rather than in the number piled upon each other, their characteristic practical aim. Hence their earliest as well as latest triumphs in architecture, which were true types of their genius, were military constructions such as bridges, aqueducts, and other kindred works; emblems of a people in motion rather than at rest. When afterwards, houses for a people at home, and not in the moving camp, at peace and not in war, began to be reared, they took character from the spirit of the builders; and practical science, the medium between the ideal art of the Greek and the gigantic emptiness of the Egyptian, gave strength, the medium between grace and massiveness to their structures.

When the age for added refinement came, their effort at finish showed itself in what Cicero calls, "a manly and robust ornament." It added to the light grace of the Grecian columnar capitals details designed to furnish greater strength, and the capacity to sustain a greater superincumbent weight. This increase of details naturally tended to an excess of ornament; a fault into which the Greeks were not liable to be betrayed, as Pope in his Essay on Criticism thus intimates;

> "Hear how learned Greece her useful rules indite,
> When to repress and when indulge our flights."

The Roman decorator of architectural forms when once his fancy had taken wings did not know where to check its range. In this art, especially their own, the Romans aimed at ornamentation too excessive to comport with the chasteness of the grand style of the Greeks, for which the Latin tongue supplied a designation in the word *elegant*. These two characteristics, strength and elegance, and

their application by the Romans to different classes of structures reared in their own city and in other climes, and that in succeeding ages of culture and of decline, hint a natural division of the subject of Roman Architecture.

Sect. 1. The Introduction of Curved Lines in groundplot and elevation, giving breadth and stateliness to Roman Architecture.

As we have observed the two classes of lines of beauty are straight lines of proportionate length, and curved lines of regular sweep. In every possible exquisite execution of the latter in sculpture the Greeks were masters; while by the mathematical nicety with which in architecture they used the former, they left no room for improvement, attaining in fact to such perfection in rectangular temple-fronts that Cicero said they could not be improved in Heaven itself. The Romans first dignified by its noble development, the employ of curved lines, not simply in the ornaments of capitals and cornices, in which both the Egyptians and Greeks had used curves, but also in the groundplot and in the elevation of edifices. This feature the Roman architect manifestly introduced to secure the two ends of spaciousness and elegance.

Among all the specimens of Grecian architecture, except in the early Pelasgic relics to be hereafter noticed, no edifice is found whose groundplot is not a rectangle. No line of a Grecian structure was circular, or visibly curvilinear, except their columns and such column-like structures as the Choragic Monument at Athens. Nearly all their architectural works proper were temples; and these had a rectangle for a base. The Romans, however, not simply for convenience, but evidently from a principle of taste took two of the curves of the Conic Sections, the circle and the ellipse, either entire or of half size, as their groundplots for larger and grander edifices; while they also retained the Greek rectangle for many of their buildings. The Pantheon, and the tomb of Marcellus, now the Castle of St. Angelo, still standing in all their strength and elegance at Rome, are noble specimens of a complete circle as a groundplot; the Coliseum, the most majestic pile in the world, has an entire and perfect ellipse as its base; while many of the smaller Roman temples are circular, and most of their amphitheatres either semielliptical or semicircular in ground-outline.

The Egyptians even under a flat roof and straight lintel, secured considerable breadth of hall and door-way, sometimes even thirty feet, by the immense length of the overlapping stones which they

raised and laid across their side-walls; but the practical Roman could not think of such a waste of labor. The Greeks from the necessity of their climate, used a sloping roof as a water shed, giving its slant for beauty's sake the slightest possible rise; occasioning thus, however, an almost direct outward thrust, to overcome which without sacrificing chasteness by the introduction of outside props they built up inner supporting walls, whose intervention allowed a limited breadth of interior. The Romans wished broad gate and door-ways, and lofty spreading roof-elevation, without the clumsy Egyptian method of securing the former, and vastly beyond any invented power to attain the latter; and they dared to use, if they did not invent, the circular arch, by which the former end was accomplished, and the dome by which, for all the world and for all time, the latter aim was realized.

The Brahmins of India, knew in their adopted Southern home, perhaps carried from their primæval Northern birth-place as a race, the principle of the circular arch; and understanding the law of its constantly pressing and dislocating lateral thrust, they embodied their objection to its use in larger edifices in the maxim, "the arch never sleeps." All the so-called arches used by the ancient and modern Asiatics have been straight arches, formed by leaving a space in the stone wall for a door or window up to its height, and then inserting longer stones in the wall above, so that each should overlap its fellow below until the ends advancing from both sides met, and thus closed the open space. The tapering domes of Asiatic pagodas sometimes supposed to be curved domes were formed by laying shorter corner beams across the four right angles of the square base of the dome, then yet shorter ones across the eight obtuse angles of the new base thus formed; and so continually multiplying the sides and angles, diminishing all the while the diameter of the straight dome till it came to an apex. In the circular arch, however, whose surface is a half cylinder, the junctures of each added course of stones must lie in the plane of the axis of the cylinder cutting its surface; the faces of the stones of each course being so cut, each being thicker at the outside than at the inside of the arch, that in passing from the base to the apex of the arch the upper faces will have a slope more and more downward and inward, varying through 90° degrees from horizontal to perpendicular in each half of the arch; while each added course tilts inward further than the course next below it, till the two sides, rising together, and supported

temporarily from below, meet, and receiving the central key-stone are sustained by their own pressure against each other.

In the dome, again, which is the surface of a hemisphere, or curved surface of double curvature, while the junctures of the upper and lower faces of each course of stones conform to the law of the arch just stated, the junctures of the side faces must lie in planes coincident with the axis of the hemisphere, and perpendicular to its base; so that when laid, the entire circuit of the upper faces of the courses shall lie in the superficies of the slant height of a series of cones whose bases diminish in the ratio of the circles both inner and outer of the courses of stones, while their axes increase in the same ratio, and lie in the axis of the hemisphere. In the dome, each course of stones, by the force of gravity acting in one line downward, is supported when laid completely around by the pressure of its faces on each other, and is in itself a self-supporting double arch. As there is in the arch and dome both a downward and outward pressure, there must be in its foundation, whether that foundation be the solid ground or the walls of an edifice on which the arch or dome is to be elevated, both a mass and disposition of material, which shall secure an upward and lateral support and bracing adequate to serve as a counterpoise to the crush and the thrust. The very earliest great architectural works of the Romans show their thorough and practical understanding both of the nice theory, and of the nicer execution essential to the successful use of the curved line for purposes of elevation.

Sect. 2. Modifications of the Greek columnar orders; giving increased profusion of elegant ornamentation to Roman edifices.

As an immediate consequence of the circular, or elliptical ground-plot to secure breadth, and of the dome to attain elevation, modifications of the methods of columnar decorations as used by both the Egyptians and the Greeks became essential for the Romans. The plain walls of a rectangular building have a chaste beauty requiring no ornamentation. How blank and inelegant the walls of a circular edifice become without some exterior adornment, the contrast between the unadorned Pantheon, and the elaborately ornamented Coliseum walls strikingly illustrates. The necessity for columnar additions in such structures became at once apparent. From necessity the Roman architect resorted to two modifications of the Grecian style: the use in buildings of one story or more of pilasters or half columns merely projecting from the exterior wall, instead of complete columns

standing out as supports of a portico at some distance from that wall; and the employ in all buildings of more than one story of columns of different orders.

The first of these modifications gave rise to several distinct subordinate features. Since around a circular edifice it is impossible without an added portico roof to have columns proper, and that because the dome-roof must rest directly on the side walls of the edifice and cannot project beyond them so as to cover a portico, the Romans resorted to pilasters, or half columns, built into, or fastened upon the wall; which pilasters required only a slightly projecting cornice, as is seen in the Coliseum. As this method, however, did not give sufficient prominence to the entrance, a purely Grecian portico with columns, entablature, and pediment, was projected in front of a circular edifice, as in the Pantheon. In smaller edifices, moreover, as in the little circular shrines like that of Vesta at Rome, the light roof was of wood; whose timbers extending over the wall formed a projecting rotunda, sustained by a circlet of delicate Corinthian columns. Behind these columns, both in the Grecian portico and the Roman rotunda, pilasters corresponding to a second row of columns were fastened upon the circular wall. Carrying this idea still farther, the walls of rectangular buildings were ornamented with false pilasters; mere flat slabs carved with the flutes, the cap and the base of a column fastened to the plain straight wall in place of the rounded half column projected from the circular wall.

These modes of ornamentation, never allowed by Greek simplicity, were universally adopted in the ordinary architecture of the Romans; as they are a marked feature in almost every variety of building in modern times. The modification of the *styles* of Grecian columnar architecture just considered, was made necessary by the extent of *groundplot*, sought by the Romans, giving increased *breadth* of open interior and requiring a circular wall on which should rest the circular roof. A second modification affecting the *orders* of Grecian columnar architecture arose from the increased *height* required by the *elevation* necessary in the construction of the dome as a roof. The Grecian temple had only one story, and its single tier of columns, all of the same order, rose to the eaves of the building; an elevation seldom exceeding forty feet, and calling, therefore, for columns seldom exceeding about thirty-six feet in height by six feet in diameter. The greater elevation of the Roman edifice demanded additional stories with as many separate tiers of columnar decorations; the exterior walls of the Coliseum, for instance, having four

such stages of elevation. The question seems to have arisen to the Roman mind whether true taste would allow the same order of columns, or pilasters, to be used in successive stages one above the other, or would require a change in the orders in each succeeding tier. Grecian taste might have approved the reform upon the Roman method made at a later day by Michel Angelo; who taught that the same order of columns should be employed in the decoration of a building having several stages of elevation. The Romans' less chastened love of simplicity sought variety of decoration; used different orders of columns at different elevations; and since the three Grecian orders did not furnish the variety their method demanded, they invented two additional ones, going beyond the exhaustive analysis which the early philosophy of even Egyptian builders had settled.

The Tuscan order was nothing else than the improvement of the carpenter's plain gate-post boxed and capped. Vitruvius, the Roman architect, gives as the proportions of this order, fixed by art, the following: the height to be seven diameters; the taper of the shaft to be equal to one-fourth of the diameter from the bottom to the top; the base to be of two parts, the lower and broader having an elevation of one-half the diameter of the shaft; the capital to have the same height as the base, though the breadth of neither base nor capital was fixed. The plainness of the Tuscan has made it to be almost universally used in modern times in Roman or Græco-Roman buildings for the decoration of basement stories, the portion of their edifices which the Greeks entirely hid by surrounding steps; while in Romanesque buildings this order is occasionally introduced in the columns of the main portico. The Doric, susceptible of greatly varied proportions, was used by the Romans extensively in arcades, whose elevation often allowed only the height of a half column; and for this purpose, as well as for uniformity, when interposed between two tiers of columns of different orders, the Roman Doric had a base added to it. The Ionic was made stouter than the Grecian order; a third, or side face being given to the outside or corner columns in an Ionic portico, which required that the corner curls should run into one and project diagonally from the cap half-way between the front and side lines of the entablature. Though not favorite among the Romans the Ionic column was usually made to intervene between the Doric and Corinthian when three or more stages of elevation were employed. To the Corinthian capital decorated by the Greeks with thin leaf-work, in order that the capital might seem adequate to the

heavier weight imposed upon the column, the Romans added strong curved or spike-shaped stems often called horns; whose stout form, though opposed to lightness, was not only an apparent, but a real architectural support. Yet again, as in order to increase the variety of their columnar decorations the Romans had introduced an order, the Tuscan, below the plainest of the three Grecian, so they added one, the Composite, more elaborate than the most ornamental of the Greeks. The capital of the Roman Composite unites to the volutes of the Ionic capital projected at four corners, the interposed foliate decorations borrowed from the Corinthian order. In the Coliseum the lower stage is Doric, the second Ionic, the third Corinthian, the fourth Composite.

SECT. 3. VARIED CLASSES OF BUILDINGS AND MODES OF STRUCTURE REQUIRED BY THE CIRCUMSTANCES, CHARACTER AND HABITS OF THE ROMAN PEOPLE.

The climate of Rome, so much more inclement from its latitude than that of most Grecian cities, required in general walls and roofs more enclosed. Since the Roman people, too, like the Greeks, were a nation of princes, they required in their social gatherings for varied purposes, edifices both broad and elevated; and this added a new difficulty to be surmounted in the wall and roof enclosure of their public buildings. The four principal demands of social life for which the Romans needed, like other cultured people, a provision in their edifices, were these; the supply of their material wants by markets and clustered shops, the meeting of their governmental exigencies in the basilica, the satisfying of their intellectual and æsthetic nature in the theatre and amphitheatre, and the feeding of their religious cravings in their temples. Each of these took its peculiar national characteristics from the circumstances, character and habits of the Roman people.

The Greeks from the genial temperature of their climate could have the market stalls and ware rooms around their agora much more open and less clustered than was required in the close built city of Rome exposed to cold winds and rains from the neighboring plains and not distant mountains. Their Forum therefore was surrounded by arcade buildings whose basement accommodated the venders of heavier articles particularly of all kinds of provisions; while the upper lofts and balconies favored the pursuits of tradesmen in lighter and more delicate wares required for clothing and personal ornament. These arcades demanded the style of columnar decora-

tion already referred to. Again, the same severe climate, not to say the different ideas of propriety which the necessity for more ample clothing in both sexes cultured, forbade the Greeks' free resort to the river-side, and to the sea-shore for bathing. The baths of the Romans were extended if not elevated structures, whose heavy weight of water-tanks required strong supporting arches. These material wants, receiving shape from the circumstances and habits of the people, were controlling in their influences on architectural features.

The Roman people proper were all patrician in their own esteem; each senator and high officer was a virtual king, and the Greek name for royal or kingly dignity was naturally applied to the chief audience hall of the many statesmen whom the best days of the Republic called forth, and whose influence indeed the first Emperor could not materially affect. From being at first a hall in the mansion of the patrician statesmen, the basilica became a separate edifice. It usually consisted of a central hall, long and sufficiently narrow to support the steep roof that covered it; on each side of which hall wings one story in height were built, giving double or treble breadth of area for the audience room. The walls of the central and higher portion necessarily open at bottom so as to make the wings an unobstructed portion of the main ground-floor, were supported each by a row of short strong columns set sufficiently far apart not to obstruct the view and hearing of the auditory; while arches thrown from column to column sustained the wall between and above the columns. These rows of columns, giving at once strength and elegance to the interior, were of different orders; though the plainer Tuscan and Doric were preferred by the old Romans. A Grecian portico to shelter the entrance was added; and the basilica, thus constructed, became, as we shall see, the first chosen model for Christian places of religious audience and devotion.

The theatre and amphitheatre, usually of immense area to accommodate the crowds that thronged them, were necessarily uncovered, except by tent cloths serving the individuals and family, as screens from the sun's heat and the falling rain. The number and size of these structures, scattered from Rome as a centre throughout Italy, is at the same time a memorial of the devotion of the Roman people to the rude and often brutal sports of the arena; while they are also monuments of the grandeur of the Roman conception of architectural proportions.

The temples of the Romans were many of them after the general Grecian type as to form, though more elaborate and loaded with

architectural decoration; as is seen in the remains of several now scattered along the Roman Forum. Many also of their temples were of a circular form; with hemispherical domes as roofs. Of this the little temples of Vesta, near Tivoli, and on the Tiber in Rome, not more than twelve feet in diameter, designed for a single deity, and the Pantheon, or Temple, consecrated after the Roman idea of appropriation in religion as in everything else to all gods, one hundred and thirty-two feet in diameter, are interesting relics. The wonder of Roman genius in these structures, however, is the science shown in their elevation, rather than the practical adaptation realized in their groundplot. Unlike the theatres and amphitheatres just mentioned, and the tombs next to be considered, the circular temples, even the immense Pantheon, were spanned by arched roofs. As we shall see, never has human skill surpassed that old structure; for the daring of Michel Angelo in his conception of the dome of St. Peter's, could find no bolder expression than this, that he would "hang the Pantheon in the air."

The Romans were cosmopolitan among other things in the form of their tombs; yet they had a native taste corresponding with their general characteristics, as seen in their temple architecture. While there are without the gates of the city one or two towering pyramids, meant to imitate the Egyptian taste in funereal monuments, and along the Appian way, near Rome as well as at Pompeii, numberless Grecian and other foreign-built tombs, there are several circular towers reared as tombs, which show the universal fondness of the Romans for the curved line in architecture. One of these, the tomb of Cecilia Metella, on the Appian way south of the city, one hundred feet in diameter, and another, the Mausoleum of Hadrian, on the north bank of the Tiber, now the Castle of St. Angelo, two hundred feet in diameter, are monuments of the grandeur of Roman conceptions and the elegance they sought as an element of their architecture.

Sect. 4. History of Roman Taste in Architecture; the curvilinear Etruscan under the kings; the rectangular and columnar Grecian under the Republic and earlier Emperors; and the adaptation of both these to the new faith under Christian Emperors.

There are three marked periods in the history of architecture in Rome; corresponding very nearly to the three great periods in her political history. The first is the age of Etruscan art; beginning before Rome was founded and extending through the history of her

kings; during which the type of her architecture was native, originating in the early Greco-Asiatic associations of the primitive Romans. The second is the age of prevailing Grecian taste, corresponding nearly to the age of the Republic, and culminating under the first Emperor; during which there was a growing fondness for Greek columnar ornamentation. The third began early in the history of the Empire, developing itself fully in its declining years; during which time foreign ideas were gaining more control until entirely distinct styles, especially in Church architecture, all of them having Roman characteristics, grew up in distant sections of the Empire.

The Etrurians, who, at an era prior to authentic history, entered Italy and after driving back the Umbrians, the native inhabitants, into the mountain valleys to the north and east, settled in the region between the rivers Tiber and Anio, seem to have come from Lydia, on the western coast of Asia Minor, about the twelfth century before Christ. Upon the fall of Troy, the conquered heroes from the same Asiatic coast sought the Etruscan asylum; sung by Virgil in his Æneid, a poem founded upon historic facts. As this people brought with them a high order of art in sculpture, so they did in architecture. The Etruscans built tombs that have remained to this day as monuments of their skill in architecture; while most of their works above ground located in their own territory have disappeared. These tombs were circular and arched above; their temples were of two kinds, circular and rectangular, as Vitruvius states; while the specimens of their secular architecture remaining are of the same two classes, the rectangular being the type that prevailed in Greece, the circular at Rome. The largest and one of the oldest tombs left by them, covered above by a tumulus, or mound of earth, like those now standing near the site of ancient Troy, and much, too, like the barrows or mounds now found so extensively along the American rivers in the Mississippi valley, is found at the little town of Vulci; below which tumulus is a circular arched dome not less than 240 feet in diameter, and 120 feet in height. An impressive specimen of their grand ideas in architecture above ground is seen in the rock-hewn amphitheatre of Sutri; which in form is an ellipse of slight eccentricity, having as its diameters 295 and 265 feet. At the founding of Rome, B. C. 753, the Etruscan builders were employed as architects. The oldest of their known works at Rome is the Cloaca Maxima, or great Sewer, a work executed as early as B. C. 616; consisting of a circular arched underground pas-

sage extending from the Forum, or market, as a drain to the river Tiber. The interior diameter is about fourteen feet; giving an altitude of about seven feet, or sufficient for loaded carts to drive through. The arch consists of double concentric rows of stones, about five feet long and three and a-half feet in thickness; which, though laid without cement, have retained their place and preserved the passage uninjured for 2500 years. Their second work of note was the temple to Jupiter of the Capitol, standing on the Capitoline Hill, dedicated about B. C. 507; and probably about the same age, the Pantheon, or temple of all Gods, which is a circular structure with an exterior diameter of 144 feet, interior of 132 feet, the walls being, therefore, six feet thick, while the height of the centre of the dome built on the walls is also 132 feet. The close of this age of native Etruscan seems to have corresponded nearly to that of the termination of the line of Roman kings, or about B. C. 530.

After the establishment of the Republic, Grecian in its idea, and having the twelve tables made up chiefly of the laws of Solon as its code, more of a Grecian influence came in to modify the native taste in architecture. The two Greek settlements in Italy, Etruria in the north, and Magna Grecia in the south, had already sent forth a leavening influence throughout Italy. As early as about B. C. 500, we find Greek artists employed at Rome; and probably their presence created a taste for Grecian columnar architecture. This taste showed itself in structures of a rectangular form with Greek columns or pilasters as modified by the Romans; and also in the addition of Grecian porticoes to earlier Etruscan buildings. This Grecian culture, growing in the best days of the Republic, culminated under the first emperor Augustus, about B. C. 31. A few years later the theatre of Marcellus was built, the portico of the Pantheon was added, and several of the rectangular temples whose noble columns in ruins now line the extent of the old forum, were reared; works whose few sad relics justify Suetonius' judgment as to the boast of the first proud emperor, "That he had found the city built of brick, and he left it built of marble." The ruthless destruction of a portion of the city by fire, caused by Nero, called for new erections; and the Coliseum built under Vespasian, the Arch of Titus, the Basilica and column of Trajan, the magnificent works of Hadrian of which the temple of Jupiter Olympus is a noble specimen, the arch of Septimius Severus, the Baths of Caracalla, and finally the Basilica of Maxentius, following each other at Rome, in succeeding

ages down to A. D. 306, are indications how long the purer taste of Greece lingered in its refining influence under the reign of the Roman emperors. The noblest of these was the Coliseum, an elliptical amphitheatre, with its diameters 620 and 513 feet, having an exterior wall elevated to the height of 157 feet, adorned with four stages of pilasters, rising in as many stories, the first Doric, the second Ionic, the third Corinthian, and the fourth Composite quite to the top of the surrounding walls; furnished within with seats supported by arcades and sloping downward from the giddy height of the exterior wall to the elliptical ring of the arena in the centre; which seats would accommodate 107,000 spectators.

At the introduction of Christianity a new modifying influence began, whose effect, though slight for a century, gradually became more manifest, until under Constantine it became controlling in its sway. The new religion, requiring men to meet in smaller or larger assemblies, not to adore the deity through an enshrined image and within the enclosure of that shrine, but to worship an everywhere present God, and to listen to the teachings of His word by its appointed expounders, naturally led Christians at first to meet anywhere, according as convenience offered a gathering place. At first their assemblies were small, and in the *atrium* of a private house; then, as their own numbers and their hearers who were not Christians increased, in a public hall, or under a colonnade such as the Stoics frequented. When they began to have fixed places for their simple worship, the structure least costly and best adapted was the *basilica* in which the Romans were wont to gather for popular harangues on secular topics. When afterwards the religion of Christ became the State religion, and temples of their varied deities, alike the circular Pantheon and the rectangular temple of Jupiter, were devoted to Christian purposes, Christian Churches naturally took either one of the general forms of which these now consecrated temples were models. The special consideration of the leading types among these forms, all of which grew out of Roman styles of architecture demand a new chapter for their development.

Sect. 5. Influence of the Roman Civil Domination on the Styles of Architecture in the Roman Provinces.

Power with the sword has less influence than intellectual superiority in modifying and transforming the tastes of a people. The conqueror himself will be the transformed party when the conquered is the master mentally; as it proved with conquering Roman and the

conquered Greek, with the subjugating Mohammedan and the subject Christian. Rome had no native superior skill in sculpture or painting to transmit to other nations. She had, however, an architectural genius peculiarly her own; and its marks are in our age better preserved in some of the remote and retired provincial towns, in their day little thought of, than in the relics of what was then called "the eternal city." This influence was partly the result of her civil power; which extended not simply to the east and south covering Western Asia and Northern Africa, where the Greek conqueror had preceded them, but also to the north and west throughout all Europe. The peculiar Roman stamp on provincial architecture was mainly the result of the peculiar notions of the Romans as to religion; that every land and people had its own gods and its religion, which were not simply the best, but the only ones for them: an idea which led this sagacious as well as powerful people not only to tolerate, but even to adopt in each new country they conquered the social customs, civil institutions, and religious superstitions of every nation newly subjugated; doing this not simply from motives of wise policy and principles of sound philosophy, but from genuine allegiance to truth and right.

The relics of Roman architecture found in the provinces show no less than three distinct fields in which that people were enabled to advance on the old ideas that prevailed before their coming. It is instructive to observe that amid the hoary and long before stereotyped civilization of Asia and Northern Africa it was utterly impossible for either Grecian or Roman art to introduce any of its methods. Not a Grecian or Roman column appears in any of the temples of Egypt erected by the Ptolemies or the Cæsars; and as we have observed, the only impress of the superior genius then brought into this field is found in superior finish given to Egyptian forms.

In Arabia Petræa, Palestine and Syria, however, true Roman columnar decorations are met. Though the pure Greek taste would allow no mingling of styles, and therefore as it could not compromise could not rule, the Roman method permitted just the variety found in these mentioned relics. The Doric and Corinthian pilasters, capped by the flat Egyptian abacus or the four-faced slope of the Egyptian pyramid, as well as the circular arch so frequent at Petra, demonstrated what history attests that these structures were perfected, though not begun by the Roman emperors. The Golden gate-way on the east of the temple area at Jerusalem, with its circular arch and Corinthian pilasters, and also the tombs in the Valley of Jeho-

shaphat with their Ionic pilasters and their four-faced and conical pagoda-shaped tops, show by their architectural relics as plainly as by the descriptions given by Josephus of Herod's temple, whose peerless elegance drew forth even Christ's eulogy,[1] that these structures were executed by Roman artists between the times of Herod the Great and of Adrian, the two Roman re-builders of Jerusalem. The clear imprint of history stereotyped on architectural monuments is yet more impressive at Baalbeck; for no one can glance a moment at the long range of Corinthian columns standing there upon and amid old Asiatic foundations, or even can examine the rudest engraving of them, without being assured of their Roman origin. The old past of Roman elegance in architecture lives before the admiring traveler as on the spot he weighs testimony gathered from coins, from the pages of Josephus and of Pliny and from the chronicles of an early Christian bishop of Antioch, that Baalbeck under the Grecian name of Heliopolis was made the head of a Roman colony by Julius Cæsar, that it was guarded by a Roman garrison under Augustus, and that by Antonine the Pious, at the era when the Roman columnar style was fixed, a magnificent temple to Jupiter was here erected.

Passing from Africa, where Roman influence in architecture was slight, through Asia where it was during its day controlling, we find its third sphere of influence in Northern and Western Europe. As Rome the captor had received the refinement of Greece when that people superior in culture was conquered, so when she conquered Barbarian tribes in Spain, Gaul, Germany and Britain, she first carried her arts with her to these people as vanquished and subject; and they when in turn they became Rome's conquerors, bore her special art, that of architecture, with them to the North. We shall find that even in distant Britain, the remotest and most isolated of all her conquests, Roman ideas in architecture took such early and permanent hold of the popular mind that not only did the Roman round arch become from the first a favorite feature of Saxon secular architecture, but the Saxon people as early as the Eighth Century were found petitioning their ecclesiastical authorities to have their churches built "more Romano," in the Roman method.

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[1] Mark xiii. 1, 2.

CHAPTER V.

SACRED ARCHITECTURE, AS CONTROLLED BY THE SPIRITUAL WORSHIP AND THE PRACTICAL CHARITY OF THE CHRISTIAN FAITH.

The religion of Christ, as we are taught by its great expounder to the nations of European stock, "is the wisdom of God and the power of God unto salvation" for mankind. It won its way, it conquered the world, first by convincing the intellect of its theoretic truth, and second by showing in men's lives its practical grace; the Greek, after much thought and reluctant surrendering of his previous philosophies, being mastered by its superior "wisdom;" while the Roman, though long hesitating and waiting to see the full test of its strength, at length availed himself of its all-subduing "power." During the first century of its quiet spread there were "not many," though some, of the "wise" of Greece and of the "mighty" of Rome that hailed its advent; but in the second century the best of Grecian intellect was won to it; in the third century the proudest Romans acknowledged its claims; and early in the fourth century it was accepted by the State that controlled the world as the power that was to rule among the nations. Of this series of general facts as to the spread of Christianity, the emptying of the Schools of Alexandria, then the centre of Grecian learning, by the Christian School of Origen, the writings of such men as Justin the Martyr, the alternation of a patronizing court paid to the adherents of the Christian faith and of bitter opposition arrayed against them by the Roman emperors from Trajan to Constantine, and finally the edict of toleration A. D. 306 and the public embracing of the conquering faith by the monarch of the Roman world A. D. 323, are sufficient testimony. Among the marked indications of the early influence of the new faith, however, the history of Christian sacred architecture is perhaps the clearest; since its monuments may still be seen.

Living under the Roman civil sway, and proud as their great apostle even was of the claim, "I am a Roman citizen," it was natural that the early Christians should in things not inconsistent with their religious principles follow Roman ideas. The Romans, as we have seen, not only tolerated but adopted as legitimate, the religion of every land and people brought under their sway, allowing Paul to preach in his own hired house at Rome,[1] and permitting

[1] Acts xxviii. 30, 31.

Christians to meet for religious worship in any place they chose. The teaching of their Master that it was not in Mt. Gerizim nor at Jerusalem, not in the synagogue nor in the temple, but on the seashore or the mountain-side, in houses for public or private uses, that his worship was to be maintained, prepared his followers to adopt the place which comfort or convenience invited. The influx of men of Grecian taste, at a later era into the Christian Church, reacting upon Christ's principle that the magnificent temple where the thoughtless would gather was the special centre for his Gospel invitations and the world's acceptance of them, led to the adoption when their pecuniary resources allowed of the form most adapted to gatherings for the purpose of audience, and to a style of decoration most fitted to draw the mind of the unimpressible into the channel most open to the flow of gospel sentiment.

The two main characteristics of sacred architecture as it gradually assumed fixed form under the influences mentioned, were the securing of breadth of groundplot to give space for large audiences; and the attaining of loftiness of elevation to make the place of worship conspire to the exalted sentiment of the Christian faith. The styles of art prevailing in the three distinct regions where Christianity had its early seat, led to three preferred styles of Church Architecture; the Romanesque dominant in Rome, Italy, and Southern Europe; the Byzantine favorite at Constantinople, or old Byzantium, and in the East; and the Gothic prevalent in Northern and Western Europe, the region whence the Goths poured down upon Rome. In respect to time, Christian scholarship has suggested a division of the history of Sacred Architecture into three eras; *first*, the classical era, the age prior to Constantine from A. D. 100 to A. D. 323, during which a rigid copying of old forms without special adaptation to new ideas in art proper prevailed; *second*, the age of the Romanesque proper and of the Byzantine, from A. D. 323 to A. D. 692, during which the rivalries of the Eastern and Western Empire stimulated a rivalry for architectural supremacy in the two branches of the Christian Church, which culminated in the supreme excellence of the Byzantine style under Justinian A. D. 527 to A. D. 565; and *third*, the age of the Gothic from A. D. 692 to A. D. 1400, beginning with the settlement of the Ostrogoths in Northern Italy, culminating in Charlemagne's friendly rivalry with Haroun el-Rashid the Muhammedan Solomon in science and art, in institutions of learning and in every species of refinement, and extending to, though not ending with the revived Grecian of the architects of Venice, Pisa and Florence, perfected by

Michel Angelo in the incomparable Church of St. Peter's at Rome. In the full survey of these three leading types, there will necessarily be added a survey of the Saracenic or Muhammedan sacred architecture; of the revived classic as illustrated in such structures as St. Peter's of Rome, and St. Paul's of London; and of the multiform and varied styles introduced by the spirit of individual freedom and of Church independence which originated in the period of the Reformation of Religion in Northern and Western Europe.

Sect. 1. The Romanesque Style of Church Architecture; founded on that of the Roman Basilica.

The word Romanesque, though like other words familiar in the history of art, as grotesque and Arabesque, having a French termination, is not French in original application. These words, originating in the Latin, had an Italian and even a Grecian and Oriental application before they passed through the medium of the French tongue into our English vernacular. As the modern Greek language, though coming back now to the purity of the ancient classic standards, was half a century ago called Romaique from the specially modifying influence which Roman conquest and succeeding Italian supremacy had for ages exerted upon the spoken tongue of old Greece, so the Roman cast given to the earliest style of architecture which became fixed as a model for Christian sanctuaries, was called in very early histories of Christian art Romanesque, to distinguish it from later fixed and finished styles.

As already intimated, the Roman basilica, at first the atrium or principal entrance hall of the Roman private mansion, having a central elevation of two stories into which rooms on both sides and of two stories looked, was a natural gathering place of the early Christians for their reading and hearing of the word of religious truth; as also it had been the Roman patrician's audience hall for address to those whom he would influence on any topic of the day. As this private audience room of the Roman patricians grew into the dimensions of the hall called in the Greek *basilicon*, having a central portion two stories high, of any length desired, and of a breadth thirty feet or more, such as a self-supporting roof would allow, while added wings gave an entire groundplot of triple width, so it was natural that the first Christian sanctuaries should take this simplest and cheapest of all possible covered structures adapted to accommodate a large auditory. This style, modified in form to express a Christian idea, and having added decorations more or less

elaborate, as dictated by the art-spirit of succeeding ages. became the fixed style of sacred architecture denominated Romanesque.

The remaining Churches of the old order now found in Italian cities, and especially the permanent prevalence of the main features of this style as continued in Northern Italy to this day, make the statement of its chief characteristics very easy. In the earlier Churches, the main roof had a slope of little more than twenty degrees, and the central walls had a very slight elevation above the shed roof of the wings; while the exterior was perfectly unadorned. Proceeding from Rome northward, the slope of the roof became steeper, as seen in the modification of the Romanesque sometimes called the Lombard style; while still farther north, under the Alps, the roof-pitch exceeded forty-five degrees, and became the precursor of the wedge-shaped roof of the Gothic style. As taste and wealth together suggested and allowed, the elevation of the central portion over the side wings became greater to give superior elevation; when to relieve the broken roof-lines of the front gable which departed so far from the low unbroken Grecian slope, the unseemly obtuse angle formed between the wall of the upper story and the roof of the wing was filled in with a shield presenting the form of an immense double scroll. The cities of Northern Italy abound in illustrations of this method of improving the façade of the old Romanesque or Basilica Churches.

The most important modification of the Basilica suggested by Christian sentiment, was the giving to the groundplot the form of the so-called Roman cross. In the cross proper, or the main post with its cross-beam or tree to which the victim was nailed, the longer portion of the post against which the body and legs hung, was below, and the shorter, or that against which the head rested, was above the cross-beam; while the length of the beam itself, or cross-tree, was adapted for the extension and spreading of the arms. In sculptural and architectural representations, art naturally fixed a rule of definite proportions for the length of these parts; this proportion in the groundplot of a Roman Church being an equal measure for the head and the two arms of the cross, and two lengths of that common measure for its foot. The fixing of this form for the groundplot of sacred edifices, suggested doubtless at first by individual Christian sentiment, was established by a canon in those early ordinances called the "Apostolic Constitutions." By the same ordinance Church edifices were to face the east; a regulation which indicates an Oriental as well as a Roman, a Magian rather than a Mosaic idea. As

was natural, this form of groundplot, requiring a cross section which interfered with the unity that could be maintained in the true basilica with its side wings, led to a gradual contraction in the breadth of the projecting wings; until in the Gothic style they were virtually lost in the buttress. The figure of the Church, as that of Noah's ark, hence of a ship, suggested the designation of *nave*, from the Latin *navis*, for the longer portion or foot of the cross which was the body of the Church occupied by the people; the upper portion occupied by the choir and altar for services, was called the *choir;* and the two arms of the cross-section, usually filled with side chapels, were named the *transept*, or cross-hedge, from the screen wall that formed the ordinary line of separation.

The number and sumptuousness of the early Christian Churches is indirectly brought to light in scattered historical allusions. Tertullian, a polished Christian writer of the Second Century, mentions many and superb Church edifices, which as works of art won Greeks from their own waning religious systems to the Christian faith. In the days of Diocletian, a magnificent Christian Sanctuary is referred to as standing very nigh the emperor's palace in Nicomedia, and rivaling it in architectural merit. Before Constantine's accession, in the early part of the Fourth Century, there were no less than forty Church edifices at Rome which claimed esteem for the credit they brought to Christian art. The noble memorials of the old Basilica or Romanesque style, which may yet be studied in Pisa, in Florence, and even in Rome, entering as a main feature into the Cathedrals of the two former cities, make this a noble as well as a natural and therefore primitive style of sacred architecture.

SECT. 2. THE BYZANTINE STYLE OF CHURCH ARCHITECTURE; HAVING THE GREEK CROSS FOR ITS GROUNDPLOT, AND THE ROMAN DOME FOR ITS ELEVATION.

The Romanesque, founded on the Basilica style, had given only one of the two ideas sought by the Roman architect and peculiarly accordant with Christian ideas; it furnished breadth for the gathered assembly, but not the elevation suggested by the object of their gathering. In the Roman Pantheon this second idea was embodied in the dome. This feature traveled eastward with Constantine when he transferred the seat of Empire to the new city on the Bosphorus, which he made to bear his name; and becoming an avowed adherent of the Christian faith he made the dome more glorious than it had

been before conceived both in sentiment and in form in the Church edifices of the Eastern world to which it became consecrated.

The circular dome, like the arch, had an outward thrust on all sides at its base; to meet which, counterpoising abutments must be found in the structure of the edifice which it crowned. The Roman architect had accomplished this in the Pantheon by the extreme thickness and mere massiveness of the circular walls. The Christian mind, clinging to the idea of the cross, suggested to the architect as the best possible abutment for the enormous pressure and thrust of the dome, the eight walls meeting in four right angles at the intersection of the nave and transept. The Greek idea of symmetry led to the suggestion that each of the concentring arms of this cross thus supporting the dome should be of the same measure; the nave in the Byzantine Church, founded on the Greek cross, being no longer than the choir or the arms of the transept.

The first Christian emperor Constantine seems to have been the originator of this style. Certainly it was not seen in Rome, or in the Western part of the Empire for centuries after his time; while from the era of the founding of Constantinople, this style of sacred architecture has prevailed in all lands where the Eastern Church and Muhammedanism have sway. Constantine himself employed it at Constantinople, and his mother Helena in Palestine. The noblest monuments of this style now existing belong to the era of its culmination under the Emperor Justinian nearly two hundred years later. One of these is the mosque now called el-Aksa on the south of the temple area at Jerusalem; a structure 280 by 190 feet, reared and dedicated to Sophia, or Wisdom, by Justinian, about A. D. 529; preserved by the Muhammedan conqueror of the city about A. D. 685, and consecrated as a Muhammedan mosque; and from that era through the centuries of the Crusades and of the subsequent Moslem sway reverenced to this day alike by Christian and Muhammedan.

The most magnificent monument, however, of this style of art is the structure called now the mosque of St. Sophia at Constantinople. The original edifice, reared on the spot by Constantine A. D. 325, being too mean for the spirit of Justinian the great Church builder, was replaced by a structure whose magnificence led that monarch when it was completed to exclaim *Nenikēsa sē Salomon*, "I have surpassed thee, Solomon." Consecrated as a Christian Church A. D. 527, it was at the taking of Constantinople by the Turks A. D. 1453, made a Muhammedan mosque. Built in the form of the Greek

cross, the entire length of each section is 269 feet, and their breadth 143 feet. The diameter of the dome is 115 feet at the base, and its apex 180 feet above the floor, though the altitude of the dome is only one-sixth of its diameter at the base. The edifice is of brick, ceiled inside with marble, and the floor is inlaid with variegated marble tesseræ. Around the walls within runs a gallery supported by columns famed through the world for their intrinsic richness and hallowed associations. The supports of the gallery on the main floor are forty columns; eight of which are of white porphyry from the Temple of the Sun at Rome built by Aurelian; eight others of beautiful green granite or serpentine, are from the renowned Temple of Diana at Ephesus; while the added twenty-four are of red Egyptian granite. The whole together, the *Tehel Sutun* or "Forty Columns," have in the Persian a mystic significance; while the entire number in the interior of the edifice, including sixty in the gallery yet above, four of medium size and three small ones above the doors, making in all one hundred and seven, have in the Arabic a fabled perfection as supports of the House of Wisdom. The interior of the dome was carved and painted in the richest art of the time of its erection with Christian themes; all of which was covered with stucco by the Muhammedan proprietors, as was revealed by the fall of a portion of this stucco during the process of restoring the interior in 1847, when the hidden Christian Saints were seen staring upon their startled rejecters.

A third specimen of this same style of architecture, most interesting to the Christian student, is the Church of the Holy Sepulchre, at Jerusalem. Well established historical, traditional, and topographical facts, conspire to illustrate its history. Christ was crucified on a rock jutting out from the western side of the rib of the northern mountain slope called Millo by the Hebrews, and Akra, or promontory by the Greeks; that jutting rock called Golgotha in the Hebrew, *cranion* in the Greek, *calvarium* in Latin, and skull in English, being a skull-shaped protuberance from this rocky rib just north of the bold round head called Zion, which terminates the northern mountain slope just mentioned. In the enclosed basin formed at the foot of the northern side of Zion, and of the western slope of Akra, was a "garden," into which on the east the rock "Golgotha" jutted. Into the rocky slope on the opposite side of this small garden a new tomb was cut; and as at Christ's day the city wall ran along the western brow of Akra, meeting at right angles the wall on the northern slope of Zion, just above the line where an enemy in

approaching would be obliged to begin an ascent, the garden, with the rock Golgotha and the tomb, were outside of the city. After Christ's crucifixion and entombment, this spot was kept in memory by the apostle James and the Church of Jerusalem, until the destruction of the city by Titus drove them over the Jordan. The northern wall of Zion, left by Titus on the south of the garden as barracks for the Roman garrison, fixed its landmarks during about seventy succeeding years; till Hadrian rebuilt the city, and seeking to conquer Jewish and Christian prejudices by crushing them, reared a temple to Jupiter on the site of Solomon's temple, and a shrine to Venus over the tomb of Jesus. Less than two centuries later, Helena, the Christian empress, removed the desecrating shrines, and, uncovering the imperishable rock on which Jesus suffered and the cave in which he was entombed, reared a small chapel, probably of Byzantine form, over the tomb, and a large Basilica on Golgotha; and she covered the whole area of the intervening garden with an open court yard, paved with mosaics, and enclosed by colonnades on the north, west and south, and by the Basilica on the east. Nearly three hundred years later, A. D. 614, about six years after Muhammed's first efforts at conquest, and sixty years before the Muhammedan capture of Jerusalem, Chosroes II., a Persian monarch, took the city, and destroyed the chapel and basilica by fire; when, after his retreat, they were rebuilt again by Modestus, the Christian patriarch, after the style of those reared by Helena. When the Muhammedan Caliph Omar took the city, A. D. 686, these structures were undisturbed; until in A. D. 1010, the Khalif el-Hakim, caused them to be razed to the ground. Ten years after the death of this monster, or in A. D. 1021, permission was given by the Muhammedan rulers to restore the edifices on the two sacred spots; when an entire transition of sentiment as to the comparative reverence due to the place of crucifixion and of burial, as well as a triumph of Byzantine over Roman art manifested itself. Instead of the Roman Basilica over Golgotha, a Byzantine Church, with a circular dome, was built over the tomb, while over Golgotha a small chapel only was reared. This Church, finished A. D. 1048, was injured and virtually destroyed during the assaults of the first Crusaders; who after their conquest erected A. D. 1099, the immense Byzantine structure now standing. This edifice, about 300 feet long, by 200 wide, covers the entire garden, embracing beneath its broad dome no less than thirteen chapels; the chief of which are those reared over Golgotha and the tomb. It is an interesting illustration of the power of local tradition, whose

influence every traveler from all Christian lands now realizes, that the Byzantine of the east was the preferred and controlling form in the sacred structures reared by Western Christians at Jerusalem, while these same builders went home to rear Churches in the style of their own Gothic ancestry among their native mountains.

Sect. 3. The Gothic Style of Church Architecture; characterized by steepness of roof with bracing Buttresses, and by pointed windows and spires for ornament.

While the Byzantine style was rising in the East to such magnificence, the Roman Basilica even in its Italian home, was declining in worth and in favor; two causes conspiring to produce this result. First, genius was attracted to the new capital, and for a season art at Rome was left to inferior hands. Second, and as the main influence, a new race of men, the Goths, independent in sentiment and taste, but prepared to take on the polish which the treasures of the past in art and science are always ready to afford, had come pouring over the Alps, swarming through the plains of Northern Italy, reaching and overpowering the old Roman in the centre which had been vainly called the "Eternal City;" and with the rapid acquisition which novelty inspires, these new lords, amid Roman accumulations in art took on a culture which they transferred and grafted upon their native style of architecture: as they also did in respect to their laws. Though they failed to introduce Gothic architecture into Italy they arrested the spread of the Roman style northward.

In the fertile valleys of Piedmont and Switzerland, upon any road by which the traveler crosses the Alps to France or Germany, the style of roof on every cottage and even stable becomes a peculiarity worthy of study. Here there is no longer the flat promenade of the Egyptian temple on which no rain fell; nor the gentle slope of the graceful Grecian gable fitted for the flow of a mild spring shower; nor even the steeper pitch of the straight basilica or curved dome, necessary for winter rains at Rome. Neither of these could cut and throw off the deluge of snow falling at the Mountain's foot, or the avalanche slipping from its sides. A style of knife-blade roof, as universal as the short petticoat skirts of the mountain women, and as unchanging as the everlasting hills themselves, from being a necessity became a controlling fashion. Upon this idea of a steep roof the exterior form of Gothic architecture is manifestly founded; while, as we shall see, its interior decoration derives its model from the intertwining of the arching boughs of forest trees.

A series of pencil sketches may illustrate to the eye of a child what the student of art traces in the structures of men of different ages and nations as the principle of the main feature determining the details of Gothic architecture. A single beam stretching from one to the other of two walls pictures the idea of the Egyptian roof; two beams forming an obtuse angle above, and supported not simply by two outside, but also by several intervening walls, gives the Grecian gable; a single cross-beam running from wall to wall, as in the Egyptian temple, either surmounted by two equal beams meeting in a right angle above and supported by being morticed into the first or horizontal beam, or an arch thrown over in a semicircle in which the right angle mentioned could be inscribed, presents the Roman apex; while two long beams, meeting far above the walls in an acute angle, and supported by bracing ties within and buttresses without, give the native type of the Gothic lancet peak. While thus the simple sharpening of the angle of the roof-slant gives the stages of transition from the flat platform-roof appropriate to the level river bottom-lands of Egypt and Asia, to the sharp wedge-shape prevalent in the mountains of Europe, the passage from the broad wings of the Roman Basilica to the narrow buttresses of the Gothic is equally manifest in the intermediate Lombard.

The external and internal decorations of the plain Swiss walls and sharp roof have made the Gothic a style of architecture. The first of these added auxiliaries were naturally the buttresses taking the place of the disappearing wings; necessarily introduced to resist the outward thrust of a steep roof on a building broad enough for public gatherings; hence made thickest at bottom and having regular juts inwards, giving less thickness towards the top. Next, as a relief to the plain fronts, and at the same time as an emblem like the Egyptian obelisk of a spiritual idea, the single tower of entrance with a tall spire rising above, having inward juts like those of the buttresses, and a steep upward slope like that of the roof, was reared before the Church; varying taste sometimes demanding two towers showing the roof-peak in the centre, instead of the one which hid it. Yet again, the naked eaves, specially exposed where a single tower rose in front, were relieved by an ornamented parapet; upon which at regular stages, and particularly at the angles of intersection in the roof demanded by the cross-shaped groundplot, pinnacles, which were miniatures of the spire, were reared; while the upper points of both spires and pinnacles were capped either by a plain cross, by elaborate vase-shaped finials, or, as in the Cathedral of Milan, by

statues. Finally the windows, whose tops in the Roman Church were circular, in harmony with the right angle of the roof above them, took in the Gothic Church the form of the pointed arch; increasing in narrowness and sharpness with the steepness of the roof, and reaching their acme in the "lancet" window, so called from its spear-like apex.

The suggestion of Warburton, so often repeated, that the idea of Gothic architecture was derived from the intertwining of the boughs of forest trees forming natural arches, pointed and concentric, applies rather to the interior than to the exterior of the Gothic structure. When four forest trees stand near each other, their interlocking boughs form four curved beams, meeting at an apex, with pendants of leaf, flower and fruit clusters hanging underneath; the perfect fac-simile of the groined arches of the Gothic Cathedral. The pointed arch itself, the internal as well as external feature of windows and door-ways, may have been suggested by this same interlocking of crossing boughs; while, however, the Saracens seem to have borrowed the same idea from the overlapping of two semicircular arches in the Roman arcades; when as the foot of one arch stood at the centre of another arch, their circles cut each other at acute angles, forming between their crossing arcs a pointed arch. The clustered columns employed as interior supports both to the roof and the gallery, were borrowed from shrub-clumps; as the lotus-stalk, with its bud and flower, either single or clustered, was the type of Egyptian columnar architecture; as, too, according to Vitruvius' statement the tree trunk was the model of early Greek columns. In the later periods of the improved Gothic, a re-entering curved head was added to the arch, giving its summit the shape of a bulb, or mitre, sometimes called *trefoil*, as it resembled the union of three leaves lying upon each other; while a second re-entering curve was added yet below, giving the head the shape of an acorn, sometimes called *cinqfoil*, from its resemblance to five leaves united.

In tracing the history of Gothic architecture we shall find that southward it never prevailed farther than Milan, the most northerly of the great Italian cities; whose Cathedral, though thoroughly Gothic in external tracery and pinnacles, is truly Grecian in its window-caps and in the statues tipping its pinnacles; showing that while the Gothic had no power to supplant the earlier forms in their own home where art was already cultured, there was a point where classic forms could meet and blend with Gothic ideas, as Goths and Romans likewise met, and became a harmonious people. Working northward,

however, the Gothic spires began to rise far beyond the most distant view of the Alps, pervading Switzerland, Germany, France and England. It is perhaps in the latter country that the succeeding eras in the advance of this style can be best traced.

There are properly three stages in the successive modifications of Gothic architecture; and the best index by which to distinguish them is the measure of the angle at the apex of a triangle inscribed within the arch which surmounts the Gothic window. In the semicircular Roman arch that angle is, of course, a right angle, or one of 90°; in the pure Gothic it is the angle of an equilateral triangle, or 60°; while in the pointed Gothic it is an acute angle of less than 60°, and in the Tudor Gothic an obtuse angle, or one of more than 90°. From the fact that the first of these was plain and robust, the second more adorned yet chaste and slender, though not fragile, while the third was overloaded with ornaments and delicate even to frailness in its altitude, Dallaway has likened the three styles to the three Grecian orders; making the last, however, to partake of the character of the over-decorated Roman Composite. His words are, "It may not be a mere fanciful analogy if the Grecian and Gothic styles were allowed to admit of a comparison; as the Doric with Norman; the Ionic or Corinthian with pure and decorated Gothic; and the Composite with the florid Gothic and subsequent variety introduced in the Tudor age."

The earliest style of Gothic, as introduced into France and England, was the "pointed," called in its extreme the "lancet." It was the style most true to its original type, the arch of a window cut under the sharp roof of a Swiss cottage; while it was the natural opposite of the Roman circular arch which had preceded it among the conquered Saxons, Germans and Franks. The pointed Gothic was introduced into both England and France under Stephen, the last of the Norman line of English sovereigns, about A. D. 1150, or a century after the Norman sway had begun; and it prevailed about a century to A. D. 1240. It banished the semicircular Roman and semielliptical Norman arch; the side walls were made thick to resist the thrust of the roof; and the front wall, having a proportionate thickness made the entrance seem a deep cave-like recess. The door was very low, requiring worshippers when entering to bow as if in reverence to the inner sanctuary; the two side windows of the front were very narrow, and called in the Italian *lanceola*, or lancet; while the window above the door was very much wider. The pinnacles already introduced into the Norman were repeated in the

early Gothic; while also, about A. D. 1200, a plain moulding around the arches began to be employed. The Cathedrals of Bayeux and Evreux, in old Normandy, together with many of less note, the Cathedral of Rheims, the Churches of St. Denis and St. Nicasius at Amicus, the Abbey of Fecamp, and Saint's Chapel at Paris, are cited as specimens of this early Gothic.

The second style, or pure Gothic, prevailed from about A. D. 1240 to A. D. 1380, or till the reign of Henry IV. of England; and it was the glory of the Gothic style. The slope of the roof corresponded to that of the arch in which an equilateral triangle could be inscribed; the walls were made less thick, and buttresses were added as a support; and the door-way was higher and the entrance-way less deeply recessed. The windows, too, had much greater width; the mullions, or bars between the panes, were broad and delicately fluted like columns; and the trilobe and rose windows were introduced, probably from the Saracenic style. As a support to the cornice, buttresses were projected so as to support flying buttresses, while brackets were added under the cornice for relief; pinnacles were raised above the buttresses, having niches often for statues; while the columns of the interior as well as the archings were lighter and more airy. As examples of this style the Abbey Church of St. Denis, the Church of St. Oüen at Rouen, St. Stephen at Caen, and St. Sepulchre at Paris, are mentioned.

The third style, called "obtuse" from the spread of its arch, and "florid" from the superfluous ornament heaped upon it, began to prevail about A. D. 1380, ran into the Tudor about A. D. 1420, and in it held sway till A. D. 1550. It depressed the Gothic arch and introduced projecting portals over the doors; it divided the windows by horizontal transoms, and made the mullions elaborate with carvings; it pierced the paneled hoods by cutting tracery work quite through their thickness; while it divided the area of the windows into trefoils and quatrefoils, and inserted in them armorial bearings; and finally in the Tudor proper it introduced projecting bay windows, corresponding to the projecting portals. As specimens of this last stage may be mentioned King's College, Cambridge; St. George's, Windsor; and above all Henry VII.'s Chapel, Westminster.

In the south and east of France, and in Western Germany, even longer than in England and in the North of France, the Gothic style has held sway; and some of the noblest Church edifices in the world belong to it. The Cathedral of Freiburg is one of the purest and most beautiful specimens of the unique one-spired Gothic; that of

Strasburg with its two towers yet unfinished, the loftiest of which is 466 feet high, is the sublimest of all conceptions in its elevation: and that of Cologne, as yet only commenced after six centuries of expenditure, is the grandest in design. The old Cathedrals of Aix la-Chapelle, of Paris and Rheims, are most expressive of the gloomy sentiment to which this style of Church architecture may be adapted. The ceiling of the Chapel of Henry the Eighth in Westminster Abbey, London, is a perfect wonder of science and art; the laws of pressure in the arches by which its pendants are supported being now an inextricable puzzle. In no country so much as in England has the power of the Gothic to supplant and transform other styles, and to assume itself new characteristics in meeting new demands of utility and of taste, been witnessed. It changed, at first, the old Roman circular arch, which lingered in Saxon architecture, into the low pointed Norman, again into the broad vaulted Tudor, yet again into the sharp lancet, still again into the decorated florid, and finally into the mixed Elizabethan style. In England, too, the struggle and final triumph of the revived Grecian as a companion, if not a rival of the Gothic, has been most signally seen.

Sect. 4. The Saracenic, or style of Muhammedan Sacred architecture; having the Hebrew groundplot and the Byzantine elevation.

After having observed the primitive styles of Church architecture prevalent in the West in the early days of Christianity, and in the East, in later, as well as early times, even to our day, we have turned westward to trace the style that was adopted and perfected amid the advancing civilization of Western Europe. We turn now eastward to trace the rise and development of a form of sacred architecture intimately associated with the Jewish, and specially interwoven with the whole history of Christian architecture in European Turkey, in Western Asia, Northern Africa, and Southern Spain, from Constantinople quite around to Cordova.

The reader of the Koran cannot but remark the studious effort of the Arabian prophet to identify his system with that of the Old and New Testament; making his two leading revelations a reproduction of the lives of Moses and Jesus, preparatory to his own claim as a third prophet in the same line; thus seeking not simply to gain the adhesion of Jews and Christians so numerous among his fellow-countrymen, but also to win these descendants of Ishmael through

convictions already in their minds; since the Arab's reverence for Abraham as "the father of the faithful" is no less than that of the Jew, or of the Christian. It is in keeping with this fact that the very first sacred structure, worthy of mention, erected by the followers of Muhammed, was reared on the very spot where the Hebrew temple had stood, and conformed strictly to its groundplot; while its architect had on the south of that same area the Byzantine Church of Justinian as a model after which to rear this new sanctuary. In the progress of the Muhammedan conquerors, moreover, Christian scholars became the educators of their before rude people, and Christian science and art gave shape to their conceptions; and as their religious system was built substantially on the Christian faith, so it was natural that in sacred, if not in civil architecture, Christian taste should control the forms adopted.

The Hebrew, like the Egyptian temple, as we have seen, was enclosed within a wide court-yard; which was surrounded by colonnades, furnishing sheltered rooms for the attendants and pupils attached to the religious establishment, as well as lounging-places for the people congregating for business and pleasure; and this became a fixed feature of Muhammedan places of worship. Yet again, the more cultured Asiatics, as in Assyria and India, had reared pyramidal roofed pagodas on the principle of the overlapping arch; and it was natural that an Asiatic race having teachers from the west should adopt the truer form of the arch, which, under the Roman had assumed such glory, and which, on the borders of their own land had given character to Christian structures of surpassing magnificence. As we have seen, the Church built by Justinian, was standing on the south of the old temple area, when A. H. 66, or A. D. 688, the Caliph Omar, Muhammed's successor, entered the city, which structure was left in its Christian form and consecrated as a mosque. In erecting north of this on the very site of Solomon's temple the majestic structure that now stands there, it was not to be expected that the distinctive Christian features of the architect's model would be copied. Instead of a ground-plan in the form of the Greek cross, the architect ran the exterior walls across from tip to tip of that cross, filling up the angular indentations which its arms would have left, thus forming a regular octagon as the base over which to rear the Byzantine dome. The earlier mosques followed this pattern, and were truly Byzantine.

In later times, small high octagonal towers, called minarets, were raised at the corner of the surrounding court-yard; having spiral

stairways leading to projecting balconies at their summits; from which the Muezzin should call the people to prayer. Into the arches of the surrounding colonnades and exterior gateways the features of the Roman arcade were introduced; these colonnades having upper stories with short and interlacing columns and intertwining arches as supports. These arches assumed the pointed form; sometimes called Gothic from their resemblance to that western architectural feature, with which, however, this idea of the Orient called the Saracenic seems to have had no direct connection. Made up as the two halves of this arch were of arcs of circles smaller than a quadrant, and of arcs of an ellipse not exceeding a quadrant, the idea of the Saracenic arch might have naturally arisen from the combining of these regular curves, perfected as a theoretical study by the Greeks, and applied with such success by the Romans in the practical demands of their architectural works. Here, too, the mitre and acorn-shaped arches, referred to under Gothic architecture, received their highest perfection of form; giving occasion for the impression that this as well as the pointed arch, were derived from the Saracens between the age of Charlemagne and the era of the Crusades; during which long period the intercourse between the Muhammedan tribes of Asia and Africa, and the Christian nations of Europe was so intimate and friendly. In the more elaborate and ornamented style afterwards prevalent among the Moors of Northern Africa, hence called the "Moorish style," ranges of arches are introduced into the parapets and balcony railings, sometimes merely cut in wood, sometimes also built in brick and stone, having the shape of a horse-shoe; the two halves of each arch exceeding a quadrant of a circle or ellipse, and making the range a series of re-entering curves supported by the lateral pressure which each arch successively in an extended arcade exerts upon its fellow. In the most elaborate and excessively decorated Saracenic arcade, employed by the Moors in the era of their advanced culture in Spain, a style called "Arabesque" by the French, because of its origin among the Arabs, grew up; a method which grafted upon the Saracenic or Moorish arch, an excessive ornamentation, and which in modern times gives name to elaborate sculptured relief and embossed work. The order of architecture, thus characterized, though employed in palaces like the Alhambra, was properly devoted to mosques and colleges, both of which among Muhammedans, belong to the department of sacred architecture.

SECT. 5. THE REVIVED GRECIAN STYLE IN SACRED CHRISTIAN ARCHITECTURE; HAVING THE LATIN CROSS AS ITS GROUNDPLOT, THE BYZANTINE DOME AS ITS ELEVATION, AND THE PURE GRECIAN ORDERS IN ITS COLUMNAR DECORATIONS.

We have seen that the Romans while retaining substantially the forms of the Grecian orders of architecture, modified the decorations of their capitals, and added for greater variety two to the former three orders which the exhaustive analysis of the Greek had first reached and then fixed as the natural limit. We have observed too, that the Romans sought this variety in columnar decorations, not only because of the more varied styles of their structures, but also because of the greater elevation of their edifices; which had not, like the Grecian temple, only one story and one stage of columns, but several stages, one above the other; each of which Roman taste required, should be of different orders, the most robust and least ornamented at the base, and the other orders following their natural succession from the base upwards. We have again remarked that when in Christian architecture the dome was introduced, it was placed above the Greek cross, having equal arms, and not over the Roman cross in which the nave was twice the length of either of the other three parts. The additional fact should also be regarded that the body of the Church, in both the Roman and Greek Churches, was either destitute of porticoes or columnar decorations, or if added, they were not of the pure Grecian orders; while the Byzantine dome, like the Roman, was bare and destitute of columnar reliefs.

It was a great, yet a gradual revolution which culminated in the erection of such a structure as St. Peter's at Rome; and it is interesting to observe the historic steps of the progress by which it was brought about. The people of Northern Italy, especially of Tuscany, originally Greek, emigrants from Asia Minor to their western home, seem to have retained through all future ages a spirit of enterprise and a skill in art, and especially a courtesy in their intercourse with men of different culture, which made them cosmopolitan in their character and influence; their commerce reaching to almost every land, and their comprehensive, national, and religious sentiment preparing them to adopt anything worthy in art, or in the conveniences of life wherever met. This spirit of the Tuscans showed itself not simply in the cities of their own central province, but also in the neighbor cities of Pisa and Venice, and even of Genoa. Through this spirit, in its relation to art, there came very early into

these cities, from two opposite sources, the revolutionizing influence of both Byzantine and Saracenic architecture; which, under the combined influence of Tuscan enterprise, Roman grandeur and Greek grace, ripened into that climax of architectural excellence, the Church of St. Peter at Rome.

The city of Venice on the side of Northern Italy, towards Constantinople, had its merchants who penetrated to every city of the Grecian Archipelago, and of the eastern shore of the Mediterranean. These men brought home the taste of the chief city on the Bosphorus, and the wealth to reproduce its works of art. As early as A. D. 976, St. Mark's, of Venice, a magnificent specimen of Byzantine Church architecture was begun. The city of Pisa, on the side of Northern Italy towards Western Europe, including the chief seats of Moorish magnificence in Sicily, Northern Africa and Southern Spain, partook the spirit of Venice. In the middle of the eleventh century some Pisan adventurers returning home rich with the spoils of the Saracens driven out of Palermo in Sicily, brought with them a taste for the art of that cultured people; and in A. D. 1067, the Cathedral of Pisa, whose erection required fifty years in building and opened the new era in Church architecture, was begun. It has the Roman cross as its groundplot; the main body of the Church has the projecting wings of the basilica; while the spacious intersection of the arms of the cross is surmounted by a Byzantine dome with Saracenic decorations.

Stimulated by this example, the merchants of Florence, the chief city of Tuscany, determined not only to rival their neighbor city, but to surpass every city of the world in the glory of Church architecture. In A. D. 1294, they employed an architect named Arnolfo, who, four years later, submitted plans, which were accepted, for an edifice after the model of that of Pisa, but of larger dimensions; and who, for twelve years afterwards, till his death, A. D. 1310, was advancing with the work. The length of the nave and choir was 500 feet, and of the transept 306 feet; the width of the body of the Church was 128, and its height 153 feet. For 110 years after the death of Arnolfo the work lingered; no architect arising equal to the task of completing the structure, and especially of rearing the immense dome required to span the great chasm where the broad nave and transept crossed. At length a young artist named Bruneschelli conceived the grand idea, went to Rome and studied the Pantheon, and returning laid before his fellow-citizens the design of a dome vastly beyond any conception of his own times, and rivaling that wonder of ancient

days. For months the city authorities, disheartened and sceptical since three generations had failed to furnish an architect equal to the demand, spurned the persevering young artist as a visionary; till yielding at last, Bruneschelli was allowed to begin, and finally to complete the grandest work the world had then seen. Bruneschelli's dome is 138 feet 6 inches in diameter and 133 feet 3 inches in height; and the elevation of the cross above the pavement is 387 feet. It was the gigantic pile upon which the grandest of Italian artists, Michel Angelo, had his wondering gaze rivetted when he was a child; which he studied during his life till at seventy-two years of age he surpassed it in St. Peter's; and in view of which, according to his wish, often expressed during his life, he was buried in the Church of Santa Croce, whence his bust looks out on it still. This dome was made to rest on a drum, or circular wall, like that of the Pantheon; this wall being built up on immense piers, with concentric arches spanning the openings from the space beneath the dome into the nave and choir, and the cross-sections of the transept; while it was also supported against the thrust of the dome by abutting arches reaching from the drum outward to the Church walls.

The dome of the Cathedral of Florence, begun in A. D. 1420, had scarcely reached its completion, when in A. D. 1450, Rome, the seat of the Western Church, determined not to be behind its Tuscan ecclesiastical dependencies, Pisa and Florence, in sacred architecture. The new style there employed had now come to be designated "the revived Grecian;" its main characteristics being the Roman dome with pure Grecian columnar decorations; the porticoes, colonnades, reliefs on the dome, and even the lantern, having, not the Roman pilaster, but full rounded columns, all of the same Greek order, usually the Corinthian. The supreme ecclesiastical authorities determined that their metropolitan seat, in honor of their patron saint should be for all time the acme of grandeur in Church architecture; and the Church of St. Peter at Rome, modelled after the revived Grecian style, became, as Gibbon declares, "the most glorious structure that has ever been applied to the use of Religion."

The patron Saint of Rome was Peter, who from the time of the baptism of the first Roman convert to Christianity A. D. 43 to his death A. D. 68 a period of twenty-five years, was as Jerome says, pre-eminent in esteem among Roman Christians. Not long after his crucifixion with his head downward by order of Nero, the spot where he suffered, situated northwest and outside of the ancient city, was covered by his friends with a small oratorio dedicated to the apostle's

memory. This small shrine the Emperor Constantine A. D. 306, caused to be replaced by a Church in the basilica style; regardful at once of the memory of the apostle, and wisely deferential to the architectural taste then prevailing at the seat of his Western empire. This edifice must have been originally a noble one; since it stood, occasionally renovated, for twelve hundred years; and was at last reluctantly sacrificed only when it could not be made to harmonize with the plan of the new structure. Though projected A. D. 1450, the foundations of the new Church were not laid till A. D. 1506; eight years after which the original architect Bramante died, leaving his plans for years to incompetent successors.

About A. D. 1540, Michel Angelo, then in his seventy-second year, was called to undertake what every artist shrank from; and despite his Florentine independence in art judgment, and his indomitable pride as the world's recognized master in design, an independence upon which no Pope even could dare to trespass, he was entrusted not only with the plans of his predecessors, but with power to modify them at will. Though brother artists wrote to him, "Fly from the ungrateful Babylon which is unable to appreciate your genius," M. Angelo was not the man to yield to friend or foe. He enlarged Bramante's plan, especially for the dome, adding greater length to the transept, and giving added strength to the piers which were to support the dome; uttering the memorable declaration, "I will hang the Pantheon in the air." With yet greater independence he changed the groundplot from the Roman cross which successive Popes had naturally required for the form of the Greek cross, whose front projection would allow the entire dome to be seen from below. M. Angelo pushed his work on his own plan for seventeen years, until his death at the age of eighty-nine, A. D. 1563; at which time the drum was ready for the dome. Succeeding architects for more than sixty years followed Michel Angelo's plans; except in the extension of the nave so as to make the form that of the Roman cross. It was in A. D. 1626, about one hundred and seventy-five years after the first design, that the structure was so far completed as to be dedicated; while the circular colonnade was added about forty years still later.

The length of this immense edifice is 613½ feet through the nave and choir; its breadth through the transepts is 446½ feet, and the height of the ceiling in the nave is 152½ feet. The breadth of the dome at its base on the exterior is 195½ feet; its interior diameter, greatly diminished by the thickness of the double walls composing the dome, is 139¼ feet, surpassing that of the Pantheon; the height of the apex of the

dome from the pavement is 405 feet; and the elevation of the top of the cross 448 feet, a height never equalled by any human structure in the world save the great Pyramid of Egypt. The vast size of this structure is indicated by the fact that it covers 240,000 square feet, or about 5½ acres of ground; a whole village of mechanics, constantly employed to keep it in repair, living in small huts formed into the parapet on its roof; while the ball which seems no more than four inches in diameter from the front below easily accommodates eight persons. The extreme costliness of the edifice is made apparent by the mention that the original expense of its construction was nearly $47,000,000; while the annual expenditure for its care and preservation is about $30,000. The impossibility of appreciating at first sight its immense dimensions, as those of the cataract of Niagara, because all is uniformly colossal yet ever growing in vastness and grandeur as the separate details are one after another taken in, is poetically presented thus by Byron:

> "Enter; its grandeur overwhelms thee not;
> And why? it is not lessened; but thy mind,
> Expanded by the genius of the spot,
> Has grown colossal, and can only find
> A fit abode wherein appear enshrined
> Thy hopes of immortality."

Since the building of St. Peter's, the unrivalled master-piece of sacred architecture in the "Revived Grecian" style, the noblest specimen since conceived and executed is St. Paul's in London. This product of the genius of Sir Christopher Wren, begun and finished during the later years of his long life, from about A. D. 1666 to A. D. 1696, has an interior length of 500 feet, and an interior width of 286 feet; while the height from the ground to the top of the cross is 404 feet. The impression of vastness and loftiness is greater than in St. Peter's, since the interior view is less obstructed by columns, galleries, and chapels; while the immense dome is so perfectly rounded and unbroken as to carry the echo of a whisper against the wall on one side quite round to the ear held near the wall on the other side; a fact which has given the name of "Whispering Gallery" to the platform and balustrade running round the base of the dome.

Next to St. Paul's, in this style, is the Pantheon at Paris, in France. It is in form a Roman cross with magnificent Corinthian porticoes over the four ends of the arms; one of which arms is 302 feet long, and the other 255. The dome rises 268 feet, and has a diameter of 66

feet. The columns of the porticoes, and of the peristyle at the base of the dome, are of the purest Grecian Corinthian. In England and America this style has been much more copied in secular than in sacred edifices.

Sect. 6. The Modifications of Form and Style in Church Edifices suggested in the Progress of Christianity.

The spread of Christianity, gaining sway purely by the moral conviction it awakens, has been like the growth of a tree, by stages. The early Christians, energetic in their spiritual work, had little time or means to devote to sacred art. In the progress of Christianity, taking a new spring under such men as Constantine and Chrysostom, Justinian and Augustine, Charlemagne and Alcuinus, the four leading styles mentioned were the offspring of the taste as well as culture prevailing among the different nations as they became Christians. The climax of the progress of Sacred Architecture in the building of St. Peter's was reached, when, by the excess of the Reformation, a check was put to that centralization of resources, and measurably also to that spirit of advance in art which had promoted sacred architecture. The spirit of religious reform which appeared almost simultaneously in the countries north of the Alps arose among a people who had always contended for State independence as well as for freedom of individual thought and action; and while south of the Alps the Church had been consolidated into two great branches, each of which embraced a people among whom it was easy to secure unity of faith and concentration of action, the Church north of the Alps was separated into as many divergent sects as there were warring nationalities. Still more, while in Germany, and especially in England, there was for a time after their separation from the Roman Church a generally recognized national form of Church organization, the spirit of individual freedom in religious matters, once triumphant, persisted in its tendency to division upon matters of opinion, until in almost every community, there were numerous Christian sects either contending for supremacy in State patronage or demanding at least religious independence. This spirit of segregation is seen in its extreme in the American States, whose people represent so many of the nationalities of Northern Europe; among whom scarcely a village of a thousand souls can be found that has not its five or six differing Christian denominations with their separate houses of worship. More than this, as the spirit of the Reformation was specially spiritual in

its ideas and aims, and opposed to forms and ceremonies because they had been perverted, there was a double difficulty against which the spirit of improvement in Church architecture had to struggle.

In Switzerland, first met in crossing the Alps, the prevailing type of Church architecture has been from the circumstances of locality the Gothic; often rude in construction, but true to the Alpine steepness of roof; the Cathedral of Geneva being a fine specimen of the early, and that of Constance of the later Gothic. There are also old Churches in the Romanesque style; as the Cathedrals of Zurich and Schaffhausen; while at Basle, on the borders of Germany, the Cathedral, though Gothic in general type, with grotesque ornamentation, is with its added cloisters a pile without the range of classified art. In Germany, very ancient churches in the Basilica style are found in the old cities; the noblest sacred edifices, such as the Cathedrals of Vienna and Freiburg are Gothic; while in the Protestant portions of Germany no settled and truly artistic taste in Church architecture has yet been developed.

In France, the oldest Churches are Romanesque in the Roman age; but the finest Cathedrals, as of Paris, Rheims and other cities, run back to the period of the German sway when the Gothic became favorite with Charlemagne, and show that this style has long prevailed. The subsequent varied history of the changeful Gallic race in Church architecture may be traced in the following structures; the Romanesque in St. Germain de Prés; the early pointed Gothic in Notre Dame; the medium Gothic in St. Sèverin and St. Germain l'Auxerrois; the later florid Gothic in St. Jervais and St. Merri; the revived Grecian in St. Eustache and St. Etienne du Mont; the Italian of Pelladio, or Elizabethan, in St. Paul et St. Louis, the finest work of the age of Louis XIII.; the Louis Quatorze in the Val de Grace, and especially in the Hôpital des Invalides, the work of Mansard under Louis XIV.; and the somewhat modified style of the age of Louis XV. in St. Sulpice. Finally the religious spirit of the French Revolution, with its tendency in art, is illustrated in the very name as well as in the style of architecture of the "Pantheon" or temple of *all gods;* while also the genuine permanent spirit of Christianity to adopt all that is excellent in the past, and to give to the classic a higher spirituality is seen in the Church of the Madeleine, conceived and mainly executed under the sway of Napoleon.

In England and America, while religious freedom has separated Christians into sects most numerous, the stimulus of wealth and of general culture, not to say of popular religious enlightenment, has

called forth special devotion to Church Architecture. The Cathedrals of England present the most perfect history of Gothic architecture in the finest existing specimens. London alone has the noblest and richest style of Gothic in Westminster Abbey, the grandest type of classic Byzantine, next to St. Peter's, in St. Paul's; while such edifices as St. Martin's and St. Pancras, beautiful Grecian or Roman temples, with porticoes and pilasters, crowned with lofty tapering spires borrowed from the Gothic, monuments of the genius of Sir Christopher Wren, have become favorite models for ordinary Church edifices in modern times. America, however, the land of Churches, is pre-eminently rich in its variety of Church edifices. Almost every city furnishes specimens of the Basilica or Romanesque, of Byzantine, of different styles of Gothic, often too of Norman and even of Saxon types, and sometimes even of the amphitheatre style. The ordinary style of American Church edifices is that already noticed as a favorite with Sir C. Wren, a sort of Roman Gothic; an edifice with a gable end front, having a Grecian entrance-portico and side pilasters after the Roman style, and a central spire taken from the Gothic; while the interior, furnished with side galleries, has the aspect of the basilica.

CHAPTER VI.

SECULAR ARCHITECTURE AS INFLUENCED BY THE SOCIAL AND INTELLECTUAL, THE CIVIL AND DOMESTIC WANTS INDUCED BY CHRISTIAN CIVILIZATION.

While the doctrines of Christianity more than those of any other religious system have roused man's religious nature to a yearning after art in sacred architecture, its precepts awakening the soul to the social and intellectual interests for which they had been created, have, more than philosophy, prompted men to advancement in secular architecture. Even under a pure Christianity, whose first teaching as to man is that he is a depraved being, a special charm has clustered about castles and fortresses for defence from organized bands of evil men. On the other hand, the Christian faith, seeking to fore-

stall evil or alleviate its consequences, has prompted to a special zeal in rearing edifices for the education of the young, for the relief of the suffering, and for the restraint of the vicious. Yet again, under the influence of Christian truth Civil Government has become more a cherished interest of the people; and the structures meeting the requisites of its assemblies have called forth a more lavish expenditure. Finally, the pervasive moral convictions inspired by Christian grace have given such a security to accumulated wealth that private dwellings for domestic comfort and individual gratification have assumed a new character for sumptuousness and artistic merit.

These several conspiring ends claim separate notice in a survey of the new features given to secular, as well as sacred architecture, under the influence of Christianity. They lead to the consideration; *first*, of Castellated structures reared originally for defence; *second*, Capitoline styles, or buildings subserving the purposes of popular governments; *third*, Conventual styles, including edifices reared for purposes of education, physical restoration and moral reform; and *fourth*, Villa and Cottage styles embracing private suburban and country residences.

Sect. 1. Castellated Styles; as a Model for Palatial Residences.

The spirit of civil independence, carried to such an excess as to annihilate national unity with its sure safeguards and broad foundations for progress, was never more strikingly illustrated than in the social system which studded Germany, France, and England with feudal castles. To a certain extent the same system had prevailed among the early tribes that peopled the eastern shore of the Mediterranean, whose castles held by independent kings and dukes, each lord of a single fortified hill, and of some few square miles around, were captured by the consolidated confederation of the Israelitish tribes, and were then razed to the ground as unneeded in a nation having a central power for the general protection of the people. Those Asiatic tribes were too far from our times and homes to have left architectural remains for our study; but the intenser, more widespread tribal independence which has left the still standing monuments of its pervading presence and power all along the "castled crags" overhanging the Rhine, and on the abrupt hill-tops overshadowing the English and Scotch highlands has furnished fit materials for study in this field of architectural progress.

So far as the castles of Northern and Central Europe were mere military defences they belong not to civil but to military architecture; and as such they only call for that measure of notice which will illustrate the change wrought upon them when in the progress of national consolidation they became unnecessary, and in the improvement of warlike engines they became inadequate as military defences. The rude fortress-like structures reared by the German and English nobles after the retirement of their Roman conquerors, called Saxon in their style, had usually plain straight walls, built of coarse stone, with no feature to show the influence of Roman art except the circular arch over the gate-ways and loop-hole windows. Even as castles, however, these structures took on more and more a character for art; for as Dallaway remarks, "Two precisely opposite causes in England promoted the improvement of architecture; the *security* of edifices for *religious* purposes, and the *insecurity* of structures for social uses." The same author divides the progress of improvement in Saxon castellated architecture into three distinct eras; the first from Egbert to Alfred A. D. 598 to 872; the second from Alfred to Canute and Harold A. D. 1036; and the third to the Norman conquest only about fifteen years later. The improvements consisted chiefly in the introduction of Roman pilasters at the sides of the gate-ways and windows, and in the increased projection and finish of the arches above, which served as heads to the gates and windows. Both of these features showed that the Saxon castle, as well as the Saxon Church, so far as its ornament was concerned, retained still its Roman features.

The Norman conquerors from Northern France introduced various modifications in castle structures. The narrow semi-circular arch over gate-ways and windows was expanded into the broad semi-elliptical form; and the summit of the castle wall was crowned with a slightly projecting battlement. These improvements, like the Saxon, have been divided into three stages; first the age from William the Conqueror to Stephen, A. D. 1050 to 1154; second, the age of Edwards I. and II. A. D. 1272 to 1327; and third, the age of Edward III. A. D. 1327 to 1377. The Norman castles in the first age were either square, like the Saxon, and elevated far above them so as to have more stories, or they were built circular and low. The architectural features of these castles as improved by Edward I., who during the Crusades gained and brought home new ideas, were chiefly these; complete columns instead of the Roman pilasters on the sides of gate-ways and windows; increased and improved relief

in the ornaments of capitals and arches; panels inserted into the walls having reliefs in sculpture; projecting towers and battlements on the walls; and ceilings vaulted instead of flat as in the Saxon. The Norman was distinct, on the other hand, from the Gothic in having no pediments or pinnacles on the exterior, and no ribs or fret work on the ceilings in the interior. The four castles in Wales, erected by Edward I., three of which, Caernarvon, Conway, and Harlech are in good preservation, remain as monuments of the best style of Norman castles.

The Norman improvements of English castles prepared the way for their later transformation into residences proper. The increased size of the door-ways and windows, the addition at the angles of projecting square towers, whose corner location gave a free circulation of air, and still more the arcade balconies projecting into the central and open area of the castle enclosure, furnished many of the facilities required in a family residence. The tower of London became in fact the court residence of the first Norman king. During the period of the Norman sovereigns from the accession of William the Conqueror, A. D. 1066 to the end of his line A. D. 1135, the business of conquering and consolidating the nation gave little space for extended improvements; the chief features of Norman castellated architecture being those just mentioned. The much longer reign of the Plantagenets, from Henry II., A. D. 1154 to Richard III. A. D. 1483, brought no special changes in warfare, and consequently no abandonment of the main end for which castles were erected, that of defence against an invading foe. The improvements were still mainly Norman in their character; being only an enlargement and adornment of the Saxon structure to render it more commodious and tasteful. This improved adornment, however, had its marked stages. Under Edward I. great architectural improvements in exterior were introduced, better adapting castles for defence; while under Edward III., about A. D. 1350, most important changes in the interior arrangements, adapting the castle for a sumptuous abode, were made. Some of the features which mark the Gothic Churches of this era appear on the inner façades of the Norman castles. The inner court enclosure was greatly enlarged by the extension of the outer fortress walls; and fine large Gothic windows opened from the high vaulted halls into the inner court. These windows, as those in the Churches of this era, were made double, or treble, to give increased light and air; while also projecting galleries and corridors afforded a yet more open promenade for pleasant weather, and an airy lounge for the

warmer season. The castles of Windsor, Kenilworth, Alnwick and others celebrated in English history belong to this age. The style of arcade arch, by some supposed to have originated the Gothic arch, is peculiar to this period. Semi-circular, or Roman arches span double the distance of the short columns in the balustrades; the first arch resting on the first and third columns, and the second arch on the second and fourth columns; while the crossing curves of the two arches form between the second and third columns a pointed arch.

The accession of the Tudor dynasty to the throne of England under Henry VII. A. D. 1485, originated the style called in general "Tudor," from the reigning family; in the history of whose progress there were three eras, the "Tudor proper" of the time of Henry VII., the "perfected Tudor" of the reign of Henry VIII., and the "Elizabethan," prevalent under the reign of the Virgin Queen; to which may be added as a fourth stage the style of "Louis Quatorze" of France, a French rather than English style. This entire era covers a period of about two centuries. It seems to have originated not with the royal family whose name it bears, but with a nobleman of England; its field of development was the north of France and the south of England, then more than ordinarily associated; and both the capital cities and the leading towns of the two monarchies retain numerous and rich monuments of the gorgeous conceptions of the times in architectural decorations. That nobleman was the Duke of Burgundy, who in the middle of the Fifteenth Century, inspired apparently by the influence of Oriental travel, began to introduce in Northern France and the Netherlands a style of architecture, which, spreading into England about thirty-five years later, was adopted by the Tudor family, and henceforth took their name. It aimed to furnish large inside halls, spacious in extent of ground-floor and elevated in ceiling; while it added an exterior breadth and elevation that should be in harmony. Its small octagonal towers were capped with cupolas in the shape of a bulb or mitred crown; underneath which cupolas was a fringe of rich crotchets; a feature apparently borrowed by the Crusaders from Saracenic structures, and especially from the minarets of mosques. Between these towers arose tall turrets finished with pinnacle spires, and tipped with gilded vanes; a feature of the pointed Gothic. Yet more, those projections, called bay-windows, from a Saxon word meaning an angle, became delightful additions to the internal comfort of castles, inviting look-outs and pleasing reliefs to the broad blank castle wall. Richmond, in Surrey, England, a fine relic of the reign of Henry VII., illustrates this style.

The succession of Henry VIII. A. D. 1509, brought new occasion for a modified and improved architecture. This monarch in breaking off connection with the Roman Church naturally excluded foreign artists under Roman influence; and, ambitious that this separation should not be quoted as a cause of decline in the arts, he invited the genius of Oriental art controlling the Eastern Church, to the disparagement of classical forms, to add its style of ornamentation to the Norman Gothic, which was still the substantial feature of English castellated architecture. The gate-ways became lofty and crowned with the broad, semi-elliptical, obtuse-pointed arch; whose introduction marked the decline of the true Gothic so long prevalent in Church architecture. This broad arch, having an almost direct lateral thrust, could be used only in the centre of an extended wall, where the mass of material piled against its sides served as a counterpoise to its pressure. As a relief to the broad blank leaves of the double gate, embossed panels upon the doors were introduced; while side-reliefs of embossed figures in *terra cotta*, or baked clay, were inserted into the brick or stone work of the wall. The greater breadth and height given to door-ways required a corresponding breadth and height of windows; to relieve which a division was made by a transom; while a miniature battlement in the method called "crenellated" was added. As an additional ornament to the summit of the wall the chimneys were clustered and raised to the height of towers, with an embattled cornice; and the notched parapet, still so favorite as a cornice, was added to the entire line of the wall. This style of Henry VIII. seems to have spread into France, then under the reign of Francis I.; but in the hands of French artists it became more crowded with heavy towers and turrets, and loaded with excess of ornament. The palace of Dijon and the Place de Justice at Rouen are fine specimens of this style.

The third era began when after the reign of Henry VIII. the prejudice which had excluded Italian artists began to die out. Early in this period the Dutch painter Holbein came to England, whose Italian associations and culture led him back to the classic forms, especially in architecture. This new tendency of English art was increased by Inigo Jones, who was devoted to architecture, as Holbein was to painting. Born in 1572, Jones went to Italy to study his art, first in 1606, then again in 1612; whence he brought home the very year of its publication in 1613 Palladio's new treatise on architecture. Having become enthusiastically attached to the features of Roman architecture still wrought into the palace structures

of Italy he contributed largely, till his death in 1652, to foster the taste for that mingled Grecian and Gothic, Roman and Tudor style, which prevailed in England nearly one hundred and twenty years, from about the middle of the Sixteenth till near the close of the Seventeenth Century, and which afterwards received the name of "Elizabethan," from Elizabeth, whose reign extended from 1558 to 1603. As a conspiring material cause, the wealth flowing from conquest and commerce into Britain gave opportunity for the employ of that genius. Under Henry VIII. the English nobles, victorious in many a bloody field against their Catholic neighbors in the north of France, rich with the spoils captured and the ransom of captives, inspired also with new ideas of progress in art, had returned home to rival each other in costly expenditures upon their ancestral estates. The spirit awakened by such men as Raleigh, poured wealth from an increasing commerce with two worlds into the lap of the virgin queen and of her noble subjects, during her long, peaceful and prosperous reign; and then again reacted to foster genius by employing it, ushering in the Shakesperian era. Like the Romans, to whom in character they were so much allied, architecture became the favorite art of the English people in this era of their mature development as a nation.

The chief characteristic of this style arose from the fact that the expiring Gothic was running more and more into the revived classic or Roman; while both received a degenerate cast from the unnatural intermixture. Since Henry VIII. the castles newly erected had been furnished with grand halls, surmounted by lofty ceilings with high pitched rafters of unpainted oak and chestnut, supported by brackets; at the upper end large semi-hexagonal bay-windows reaching from the floor to the ceiling, and adorned with armorial bearings opened into the court below; while on the sides of the hall were wide galleries lined with oak, having their walls adorned with carved tablets, scrolls, and escutcheons, and crowned with wide cornices ornamented with oak carvings in high relief and interspersed with grotesque figures. These inside features of the perfected Tudor were modified in the Elizabethan by the introduction of classic in the place of grotesque figures, and by the change of curved and scroll panels into the straight and angular forms of rectangles and triangles. The outside modifications were yet more decided; consisting of Roman porticoes and enclosed porches with pediments and classic columns. As these features were engrafted upon the Tudor a mongrel aspect was given to the whole façade, as well as to the interior

finish of the Elizabethan edifice, which fails to satisfy either the admirer of the Gothic or classic.

The style called "Louis Quatorze," from Louis XIV. of France, whose reign extended from 1643 to 1715, illustrated in the costly palace of Versailles built by this monarch, may be regarded as a transition to the classic which soon triumphed over it. It introduced a basement truly Roman, with circular arches and square pilasters; while the main story above had Roman porticoes with Grecian triangular and Roman circular pediments, and also Roman corridors along the extended sides; the walls back of these porticoes and corridors being pierced with the windows of two stories or of a story and a-half. To these decided Roman features, with columns of rich Ionic or Corinthian, was added the scroll work of the Tudor, sometimes also the pinnacles of the Gothic, and above all, as a crowning feature the roof of double slope, called Mansard, after a French architect of that age; whose graceful curves are now repeated in what is called the French chateau roof. It was a comparatively easy transition from this style to the truly classic, Roman or Grecian, which characterizes most of the public buildings reared within the last half century in France, England and America. The transition from the Saxon, Norman, and Tudor styles, of which specimens have already been named in London, may be traced in the Gothic of Guildhall, the plain Gothic with Tudor battlements of Westminster Hall, the Tudor of St. James' Palace, the Roman Ionic and Corinthian of the Treasury and Whitehall, and the almost pure Grecian of Cumberland Terrace and Buckingham Palace.

It may be added that while the palatial edifices of Western Europe passed through the transitions mentioned, the palaces of Italy, reared by the rich commerce of such cities as Genoa, Pisa, Florence and Venice, continued to retain the features of the Roman arcade style; sometimes modified by Saracenic tracery work. Specimens of the controlling Roman feature may be seen in the Palace of the Grand Duke at Florence, by Arnolfo in 1298, designed as a monument of democratic triumph, finally finished by Vasari nearly three hundred years later, of which the last named architect said when finished, that "if Arnolfo should come back to earth to review his work he would not know the building;" and the Farnese Palace at Rome, chiefly the work of Michel Angelo, having three stories, each adorned with corridors having Doric, Ionic and Corinthian columns and pilasters, with arched entablatures rising one above another. A specimen of the influence of Saracenic taste, grafted upon a Roman foundation

is seen in the Palazzo del Commune, built by the merchants of the City of Piacenza about A. D. 1281; the lower story of which is of stone, with pointed arches in its corridors; the second story is of brick, and has the arches of its corridors of the oval horse-shoe form with heavy terra cotta mouldings.

Sect. 2. Capitoline Styles; for State Houses and Halls of Legislation.

In governments, such as monarchies and aristocracies, where the right to rule is limited to certain families and is transmitted by birth, castles or palatial residences are the natural and fit home for civil rulers. In governments in which the voice of the people is the sole rule, as in a democracy or representative republic, edifices which shall accommodate large deliberative assemblies must be provided. Ordinarily the halls designed for this purpose must be unlike in structure to audience rooms constructed for a single speaker, such as lecture-rooms or Churches; and also unlike to a theatre in which all the speakers address their hearers from one fixed stage; for in the deliberative gatherings of a people by their representatives, any one of the assembly may in his turn be the speaker, and every point in the audience-chamber must be a fit one from which to be heard.

The democracy of Athens had no covered structure in which they assembled to hear their popular orators or to take action upon public matters. In the early days of the Athenian state, the people gathered in the market place or "agora," where the numerous porticoes and the awnings of venders' stalls might serve as a partial shelter. In later times a basin-like depression on the west of the Areopagus was formed into a complete natural amphitheatre, by raising some portions with masonry, and cutting down others; and thus a gathering space of some 1200 yards square in area, without other covering than the canopy of the heavens, furnished an admirable audience-room for such orators as Demosthenes. At Rome, the Comitia, or public legislative assembly, was also held in the open air; the *comitia curiata* gathering in the Forum; the *comitia centuriata*, and the later *tributa*, meeting in any enclosed square, such as the Campus Martius, in whose area a single tent was pitched in which the priests examined the auspices and divined the future.

Under the monarchies of France and England, in which the popular branch of the Government has special control, the legislative halls have come to take more and more a distinctive style. The old Palais de Justice at Paris, in which was the "grande chambre

du Parlement," was but a palace in the style of the Elizabethan age. The present Palace of the Legislative Body, originally commenced by the Bourbons and advanced towards completion by Mansard, was finally finished under Republican influence with a grand Grecian façade; the chief feature of which is its magnificent Corinthian portico. In England, when the popular element had fully asserted its power, Westminster Hall was reared; in which Richard II. feasted 10,000 guests at Christmas. This Hall took finally the Tudor style of front, giving a broad entrance door and window, and furnishing a hall, the largest in Europe, 270 long, 74 wide, and 90 high; in which the early Parliaments of England met. In comparatively recent times the gorgeous new Parliament Houses have been elaborated in the most florid Gothic style.

It is in the great Republic of North America with its many States, originally independent, but subsequently united as one nation, that a style of buildings has originated properly designated *Capitoline*. As the human body must have a head so the body politic must; and as it is natural to call the city in which the head of a nation's government resides the "capital," so it is natural to designate the chief edifice in which the functions of Government centre the "Capitol." The name "State House," is an index to a peculiar American idea of civil institutions, as the designation "meeting-house" is to American religious organizations; but the term "Capitol," both applied to a State or to the national metropolis, at once represents the dignity and embodies the common property that are centred in the Republic. These American structures have one prevailing type; a blending of Roman grandeur and sublimity with Grecian delicacy and grace. A few States, as that of Virginia, have selected the Grecian temple as the model from which to embody their conception of the dignity belonging to the State; the type after which, apparently, the Roman Capitol, often rebuilt, had taken form in Cicero's day. Nearly all, however, of the great cities of America have chosen the most majestic of all styles, that of the old Roman dome crowning a rectangular structure with crossing arms, and adorned with pure Grecian entrance-porticoes and peristyles.

The most magnificent structure of this latter kind is the National Capitol at Washington, D. C., conceived and first built by B. H. Latrobe of Baltimore, but extended and remodelled into its present grand proportions by T. U. Walter of Philadelphia. The original central edifice was 352 feet 4 inches long, 121 feet 6 inches deep; and had in the centre a rotunda 96 feet in diameter, covered by

a dome rising to the height of 145 feet. This edifice has been enlarged; first, by an extension of two wings 142 feet 8 inches in length, and 238 feet 10 inches in depth; and second, by a new dome 180 feet 3 inches in interior elevation. The entire edifice is 751 feet 4 inches in length, 324 feet in extreme depth, covering 153,112 square feet, or a little over 3½ acres of ground; while the height of the summit of the statue on the dome above the pavement is 287 feet 5 inches. Its basement is a Roman feature; its porticoes are the purest and richest Grecian Corinthian; its dome is after the Byzantine style; and its columnar ornamentation is the revived Grecian, ennobled by Michel Angelo in St. Peter's. The columns of the inner corridors in the old central portion of the structure are Doric in the basement, and Ionic in the second stage, after Roman taste; but in the new wings, dome and lantern, the columns both within and without are pure Corinthian, following the style of the Revived Grecian. In true adherence to the Grecian idea of the Corinthian or foliated capital, which requires only that the ornamentation be truly foliage, leaving the artist to select any variety that sentiment may suggest, those plants are introduced whose leaf, flower, and fruit might be trained about their baskets by the maidens of each one of the sister States.

SECT. 3. CONVENTUAL, INCLUDING COLLEGE, HOTEL, HOSPITAL AND PRISON STYLES; DESIGNED AS CONGREGATED HOMES FOR THE EDUCATION OF YOUTH, THE ACCOMMODATION OF TRAVELERS, THE CARE OF THE INFIRM AND THE RESTRAINT OF THE VICIOUS.

As that portion of a community devoted to the defence and called to the rule of any people are congregated in castles and palaces, so there is a class of dependents that must live in congregated homes. Prominent among this class are the young, chiefly of the male sex, requiring mental education; the traveler and sojourner who needs a temporary home that shall furnish the comforts of a fixed abode; the sick, disabled and aged, who for a time or during life are dependent for support and relief; and the vicious and criminal who must be restrained and guarded as a penalty for past transgression, and as a preventive from future injury. In all lands and ages, and under the influence of all religions, there has been a recognized demand, more or less realized, for colleges, hotels, hospitals and prisons. It is, however, under the culturing influence of Christianity that the recognized demand has taken the form of a religious obligation; and that the supply of these wants by extended edifices has shown the special alliance between true art and pure religion. The

very name "Conventual," given to the style of architecture appropriate to colleges, hotels, hospitals, and even prisons, is an intimation of the immediate connection which the provision for the wants of men, indicated by these classes of edifices, has had with religion. When the architectural styles thus designated arose, Convents were the chief schools, inns, and hospitals.

Colleges and schools for the education of the young have existed in all ages and under all religions; but the influence of the Christian religion alone has extended mental culture to all classes of men and to both sexes. What the architectural style of the College of On in Egypt was, to whose President Joseph, the Egyptian prime minister was allied by marriage, and in whose halls Moses the Hebrew lawgiver and Pythagoras and Plato the Grecian philosophers learned the wisdom of the Egyptians, we have no direct information. But as the surroundings of the Hebrew temple, and also of the modern Muhammedan mosque, were modelled after the Egyptian, we have reason to suppose that as in the Hebrew College described by Ezekiel, and in the Muhammedan Colleges now seen by the traveler in Western Asia, the rooms for Egyptian Colleges were appendages of the temple built about the court-yard enclosure. The study of the Asiatic College edifice, therefore, whether ancient Egyptian or modern Muhammedan, is a part of the consideration of their sacred architecture. The Egyptian College had dark gloomy stone-walls with flat roof and projecting abacus as a cornice; but the magnificent Colleges of Bagdad and Cordova built some eight or nine centuries after Christianity began its moral supremacy, and two or three centuries after Muhammedanism had gained its wide early conquests, were of that gorgeous style of architecture called Saracenic, founded as we have seen on the Grecian Byzantine with those exuberantly rich adornments from which the florid Gothic borrowed.

The ancient Greek Academies and Colleges seem to have taken their architectural cast from the varied philosophic schools under which they originated. Socrates the practical moral teacher had no school-building, but taught in the streets, the artist's studio, the market stall, the banquet hall, or wherever he met men. Plato, the ideal metaphysical reasoner, chose a pleasant country seat of a Grecian aristocrat living just out of the city of Athens, and lectured amid the groves and gardens of Academus, whence the name Academy. Aristotle, the teacher of Natural Philosophy, had a plain room near the temple of the Lycæan Apollo as a rainy weather resort, which

was called his *Lycaion;* while his studies and teachings took him upon rambles in the fields, which gave his school the name of Peripatetic. Finally the critical, debating Stoics lounged about the *stoa* or porticoes of the agora or market-place, and hence derived their name. The Greeks therefore of the early day originated no special college style. The later widely celebrated Grecian Schools, especially those of Athens in Greece proper, of Pergamos in Asiatic Greece, of Tarsus in an Asiatic and of Alexandria in an African province, seem to have been held, as were the Oriental Schools, in rooms connected with temples or religious edifices. The Romans to a large extent trusted to Greek schools for the education of their youth; and naturally followed Grecian ideas in their own colleges.

After the introduction of Christianity, as the education of youth was the work of the clergy, the gathering places of their own monastic orders accommodated the schools. At the present day in Northern Africa and Western Asia, also throughout Egypt, the Desert of Sinai, Syria and Asia Minor, the Convents are nothing else in structure than fortified castles; having thick high walls surrounding an area ordinarily four-square, with the exterior faces an unbroken blank, unadorned ordinarily even with a parapet at the summit; while the rooms for the accommodation of teachers and pupils are arranged about the exterior wall in the manner most convenient. In the progress of Christian civilization, as styles of architecture have varied, Convents have also been modified in their structure; retaining always in the main the features of the Castellated style. Since the Protestant reform in Northern Europe, changes in College structures kindred to those of Church edifices, are to be traced. When the Church was a plain unadorned structure two stories in height, with a roof of single pitch, and that of medium slope, having its front at the gable end without tower or portal, the college also was a similar pile, perhaps four stories high, and had its unadorned entrance at the side instead of the end. In the advance of art in Protestant countries the College has followed the Church in its main architectural features; whether it be early Saxon and pointed Gothic, later Norman and Tudor, or yet later revived Grecian and Roman. The Tudor, inasmuch as the College edifice must partake in a measure of the Castellated style, is specially favorite.

In the structure of Hotels, designed for the temporary sojourn of travelers, or as the permanent abodes of associated families, the main groundplot is naturally that of a castle, four-square, with its face pierced both outwardly and inwardly with the windows of its several

stories. In lands where every abode must be a defence, hotels like convents became mere castles with plain walls; the convents indeed being the chief shelter and defence of the few that dared to roam in climes remote and among people inhospitable. In modern days, hotels are among the leading architectural ornaments of a town. The basement necessarily Roman, may be made light and airy by porticoes and colonnades; and the columns in the colonnades of the main story, the window cappings and the cornice at top, may take the form of any one style of architecture from the plain Grecian Doric to the exuberant Louis Quatorze.

Hospitals proper, including not simply temporary resorts for the diseased in body, the maimed by accident, and the wounded in battle, but also permanent asylums for the insane, the indigent, the disabled, and the deaf mute and blind are specially the offspring of Christian civilization. The Romans indeed in the best days of the republic had, as the allusions of Cicero and Vitruvius show, houses of entertainment called *hospitalia;* but these as the old Latin word and the English derivative "hospitality" indicate, were designed for the generous attentions extended to friends, in temporary need only from the fact that they were absent from their own home and its comforts. The Greeks too had a corresponding provision in the *Xenodocheion* alluded to even as early as the days of Herodotus; but neither the Greeks nor the Latins, until they became Christian, had edifices that corresponded to the modern idea of hospitals. The earliest use of the Latin name *hospitalia* as restricted to homes for the sick, seems to have arisen at Jerusalem, the Holy City, to which religious pilgrimages were made alike by Jews, Christians and Muhammedans. At first the Convents erected there during and after Constantine's reign, seem to have been the receptacles for the occasional cases of sickness occurring among the few pilgrims. When, however, after the erection of Churches and Convents by the Empress Helena, pilgrimages to the Holy City became a matter of fashion, as well as of devotion, and Jerome came from Rome to be a guide and instructor of pilgrims from the Western Church, we read of a range of dwellings built into a block along a narrow street or alley called in the Greek *laura.* In later days, about A. D. 1000, a century before the Crusades, the adherents of the Eastern or Greek Church built a *Xenodocheion* as a separate and special receptacle for the poor and sick pilgrims; which after the Crusades in the hands of the Latin or Western Crusaders became the famed Hospital of Jerusalem; the rallying centre of the order of Knights Hospitallers.

Meanwhile, and apparently through a reflex influence, hospitals originated in the two capitals of the Roman Empire, and at different points along the route thence to Jerusalem; Fabiola, a Christian lady, a friend of Jerome, building a hospital at Rome; Paula, another Christian lady, also a friend of Jerome, planting several small hospitals at different points in Palestine; while Chrysostom, in the same age, reared a kindred institution at Constantinople. Afterwards, north of the Alps, Christian cities boasted their hospitals; while on the bleak and dangerous passes of the Alps, Convents designed to blend the characteristics of the hotel and the hospital, and called in the French tongue *Hospice*, grew up. All of these took the character of Convents, already described; varying in style according to locality, climate, and the progress of art. Hospitals in modern times requiring special openness of structure and airiness in their location, take generally the Convent or College style. To this the comparatively plain Norman, or the more adorned Tudor style of Castellated architecture, are specially adapted; while, as is illustrated in the Hospital for Invalid Soldiers at Paris, even the Byzantine style is not inappropriate.

While hospitals of modern design and construction are the product of Christian civilization, the *Prison*, as an architectural edifice, is the offspring of quite modern Christian benevolence and enterprise. Existing from the days of the earliest patriarchs, in Chaldea, Egypt, and amid various races of men along the shores of the Mediterranean, the prison has been a cell dreadful to the occupant, and scarcely deserving a place in the history of architecture; as Job pictures when referring to the grave as a longed-for refuge,

> "There the prisoners rest together;
> They hear not the voice of the oppressor."

The prison vaults of ancient Jerusalem, out of whose mire Jeremiah was drawn with ropes let down to him,[1] the caves of the Mamertine prison at Rome, and the black-hole of Calcutta, are fair representations of the ideas entertained of prisons in almost every land and age; Christian civilization even having produced little or no improvement till within the last century. Since, however, prisoners confined for minor crimes have been regarded as men to be morally reformed, and work-shops, chapels and comfortable sleeping rooms have been furnished, the character of the architecture adapted to prisons has been a special study. No city of the world, probably

[1] Job iii. 18; Gen. xxxix. 20; Judg. xvi. 21; Jer. xxxviii. 6.

in this respect is to be compared to Philadelphia. The prison has naturally taken the castellated style; and that of the age when the Castle was a fortress rather than a residence. In prison, as in College architecture, the Norman style is favorite; its plain notched battlements and donjon towers being the only feature of the more adorned and later styles which seems appropriate. Any approach to the features of the Gothic, either in its crockets or pinnacles, is inconsistent with the idea of a prison structure; though the narrow lancet-shaped windows, introduced merely as ventilators, are in keeping with this end. The low and heavy Egyptian adopted in the "Tombs," so-called, of New York, have an interest as presenting a rare adaptation of a style of architecture long since passed out of use; but the irresistible impression of inconsistency in idea between a temple and prison makes the beholder wish to forget the use to which the building is devoted while he enjoys the rare specimen of ancient art before him.

Sect. 4. Villa and Cottage Styles; designed as private residences, suburban retreats and country residences.

From the earliest periods of history the dwellings of the mass of mankind, obliged to toil with their hands for a livelihood, have been tents or huts in the open country, and in the city, cellars, chambers or garrets in crowded structures, making no pretension to architectural taste in their style. In the city, moreover, private wealth seldom affords sufficient space for a residence that can possess the breadth required for elegance in architecture; and it is only in the public edifices of a city that this art can exhibit itself. When, however, wealth and taste combined seek a retreat in the suburbs of a city for temporary relief from the heat and pressure of city life, or chooses for itself a yet more rural region as a permanent abode, the taste of the true architect finds its widest scope for exercise; and that, because, while the number of studies he can make for public edifices is limited, and the demands also for variations in style on account of collocations is restricted, in suburban villas and country mansions there is no limit to the number or variety of designs required. The consideration of the first of these particulars, the varied styles of private residences in themselves considered, whether built in the city or country, belongs to the subject of architecture proper; while the discussion of the second topic, the modifications demanded by location and collocation of country residences, belongs to the subject of Landscape Gardening.

The general structure of ancient houses, whether in the south, east, or north of that "Great Sea," which, even to the times of the later Romans was the "Mediterranean," or *centre of the world*, was much the same; the chief modifying cause, since the habits and wants of men are essentially alike, being that of climate. Among Asiatics there are literally no country residences; all the laboring people living huddled in closely walled cities occupying high hill-tops; while for miles around not an abode for man is seen except the shepherd's tent. Within the walled enclosure of these elevated towns, the huts of the poor are crowded in the outskirts, built of mud, brick, or stone, with low, flat thatched roofs, without windows, and having a low wooden door. The houses of the wealthy are in streets that are only narrow alleys; a blank wall two or three stories high faces the street; and a low strong outer portal gives entrance into a narrow square cave-like passage-way, from which a side door leads into a broad court-yard open to the sky. Within this enclosure, against the street wall, are stables for donkeys, horses, or cattle; while on the other three sides, the first or lower story is occupied by rooms for servants' storage, and a stairway to the second story. The rooms of the second floor, the chief family abode, have large windows screened by lattices projecting into the court below; while over the court an awning is often drawn as a shelter from sun or rain. The roof covering the second story, which is usually the upper one, coated with gravel mixed with cement, has a slope so slight as usually to be called flat; furnishing at once a promenade in pleasant weather and a water-shed to conduct the rains into the cistern in the court.

In the houses of the affluent Greeks and Romans there was a greater depth of groundplot, though a front no wider than that of the Asiatic house. An open recess or vestibule before the door was made by setting the entrance door farther back into the wall, while the porter's lodge on the one side of the entrance was more capacious, and the stables on the other side were more commodious. The open court called *aulē* by the Greeks, and *atrium* by the Romans, had a covered colonnade projected inwards, narrowing the opening to the sky; the roof of the colonnade being supported by a peristyle of plain Tuscan, or of ornamented Corinthian columns. Around this first hall, were the offices, reception rooms, and other apartments for men; while farther back was a similar court with the female apartments surrounding it. The roof of the house, and of its interior colonnades, gathered the water from rains into an underground cis-

tern, or in more costly mansions into an upper reservoir. The floor of the atrium was paved with tiles or mosaics; and in its centre was a vase or fountain basin, adorned with shells and miniature statuary tastefully clustered, and supplied with water by a stop-cock, or flowing stream or jet. The descriptions of Cicero, Pliny, and other Romans, and especially the houses now unburied at Pompeii, fully illustrate Roman domestic architecture. From the nature of the case, the Oriental, living always in the city, unless he were a public man surrounded by a public guard, could have no country residence. On the flat roof, however, of his city residence, the Asiatic of wealth, could rear a "summer chamber," sometimes also built for a prince over a city gate, to which as lord of the manor he could retire for a noon-day nap, for private meditation or devotion; where he could enjoy quiet with a friend, or look down by pushing aside the awning to see or hear what was passing below.[1] This Oriental facility for a summer retreat, the slant of the Grecian roof scarcely permitted, and the steeper slope of the Roman roof positively forbade the use of the house-top as such a resort. Moreover the security of private property among the Greeks and Romans allowed the luxury of suburban retreats. Although the German habit of building private houses scattered over the country, and far from each other, wherever a cool spring, a shady grove, or a pleasant vale invited, was unknown in Italy, and a surprise to the historian Tacitus, yet the country for some miles about Rome was studded with villas. This custom of building, though evidently less common among the Greeks than among the Romans, had an illustration in the grove and garden of Academus, distant a few minutes walk from the city gates of Athens; a summer retreat presented by its owner to the city as a sort of park, and the favorite resort of the philosophic spirits that gathered about the ideal Plato.

The Romans, however, unlike the Greeks in their fondness for variety and scope in their private residences, were the people to exhibit comprehensiveness of idea in their suburban retreats. Cicero and Pliny adorned with their taste and enriched with their fortunes those villas which they immortalized by their pens. Those paragons of country residences which once covered the hills about Rome, extending to Tivoli and Tusculum, ten or twelve miles from the city, and even to towns on the coast like Laurentum, thirty or forty miles

[1] See Judg. iii. 20, 24: 1 Sam. ix. 25, 26; 2 Sam. xviii. 33; 2 Kings. iv. 10· xxiii. 12; Luke v. 19; Acts x. 9.

distant, are either entirely swept away, or so dilapidated as to give little idea of their former style of architecture. Still the descriptions of Vitruvius and Pliny illustrated by the relics of larger mansions now visible in unburied Pompeii, give a consistent idea of the structure of the villa house; while the plot of the grounds can still be readily traced by remaining landmarks.

Of villa mansions there were two classes. The *villa urbana*, or suburban villa, was built near the city; and it was constructed after the model of a town residence, except that its sides, as well as its front, were adorned and made commodious by balconies and porticoes. The *villa rustica*, or country residence, more distant from the city, was the mansion of the proprietor of an extended farm. Being designed for a larger retinue, it was furnished with added *cellæ* for the servants; with an *ergastulum*, or prison work-shop, where convicts hired out as laborers, according to Roman custom, were confined after their hours of toil; with cellars for wine and oil; and with extensive stalls for horses and other domestic animals; the details of whose grouping belong to Landscape Gardening. The remains of the structure called "Diomed's villa," at Pompeii, give some consistent idea of the *villa urbana;* while the grounds shown about eleven miles from Tivoli, as the "Sabine Farm" of Horace, afford an impression as to the *villa rustica.* The grandest of all old Roman villas was that of Hadrian, at Tivoli, covering a space eight or ten miles in circuit; the last grand conception of this Emperor so devoted to architecture. Upon these extended grounds, Hadrian, who had visited every part of his wide empire, designed to reproduce and bring into juxtaposition the finest structures of the known world; of Egypt, Assyria, Persia, and Greece; mingling temples, academies, theatres, and amphitheatres.

In modern times the villas about Rome and elsewhere numerous in Italy, are modeled so far as their groundplot arrangement is concerned after that of the ancients. The style of mansion called the "Italian villa," has the general characteristics of the Tudor of the Elizabethan period without its Gothic features; the Elizabethan, as we have seen, being the offspring of Italian ideas introduced after their exclusion, caused by the spirit of the Reformation, and grafted upon the Gothic. It has clustered chimneys, a straight roof with a single pitch of medium steepness, no parapet, brackets supporting the projecting eaves, a tower, usually at one side, in which is the entrance, together with arcade balconies and bay windows; and it is properly adapted to grounds of moderate extent.

The style entitled the "French Chateau" is substantially that of Louis Quatorze; the roof has the double Mansard pitch, usually curved; the entrance is at the centre of the front; the porticoes and balustrades are Roman in the decoration of their columns and pediments, and there are no projecting towers or battlements; and it is thus adapted to a town, if not a city residence, standing as it does, in an enclosure of very limited extent. The "Swiss cottage" has a sharp steep roof with eaves projected far over the walls; it has no colonnade or piazza, though there may be a projecting entrance with a covered platform; and it is a style only adapted to an open and rugged site, and to a situation underneath a hill-side where from Alpine associations such a roof seems called for. The "verandah" style, borrowed from India, a square house with flat roof, having a wide piazza running completely around, is appropriate to an open lawn, little shaded, and having a warm sunny exposure. The "kiosk," or Turkish summer house, octagonal or circular in ground-plot, having its roof mitre-shaped, either forming at top the complete half of an entire mitre, or bent into a scroll-like curve, making the roof to present only the apex of the mitre, is a style to be copied only in summer houses proper, that have only a lattice-enclosed room; and it is appropriate only as an arbor, under a shade, near a fountain, or beside a lake.

The details of the construction of cottage houses belong rather to the practical builder, than to the student tracing only the general principles of architectural structure. The adaptation of different styles of architecture, especially of villa residences, to the general character of grounds as they exist in nature and may be shaped by art, belongs to Landscape Gardening.

BOOK V.

PAINTING; THE ADDING OF COLOR TO FORM.

In the three departments of art thus far considered, we have regarded form alone, aside from color. In drawing the light and shade of perspective only require the employ of white, the combination of all colors, and of black the absence of color. In sculpture every work is of the one unvarying hue of its material; either the entire work being of one material and of a single color as white marble, dark bronze, red granite, etc.; or if, like Phidias' Minerva, made up in parts of different material, each of these parts having its own separate and peculiar color, without anything of the meeting and blending of hues and tints which is seen in the human form, and in every beast, bird, insect and plant. In architecture, color is always secondary, generally accidental, and only occasionally artistic, as an addition to the forms which that art regards its peculiar province; color being accidental in stone and brick structures, where the color is that of the material; being secondary, when, as in wooden structures, it is chosen not as having any type in nature, but from the caprice of an individual or the fashion in a community; and only being truly artistic when as an adjunct it is selected as adapted to climate, as in harmony with the surrounding scenery, or as in consistency with the use to which the edifice is devoted.

Painting should follow drawing, sculpture and architecture for two reasons; *first*, because to be a master in painting requires a theoretical acquaintance with all other arts; and *second*, because to the accurate execution of all classes of forms must be added in painting the just coloring of the forms constructed by the other arts. Lionardo da Vinci said, "A painter ought to be well instructed in perspective, to be a master of anatomy, and also to be a good architect." It should be added that in one respect Landscape Gardening should as a study precede painting; for since this art is the skilful combining of scenery in hill and vale, grove and garden, pasture

and tillage, with the added grouping of buildings and statuary, so the painter who is to be not only a copyist of what already exists in nature, but a Creator of new beauties in landscape must to a certain extent have availed himself of the study of this subsidiary art.

It is a just claim, in fact, which the painters make that theirs is the "art of arts." Drawing is a part of their work, the foundation on which the superstructure is to be reared, and of course but a subsidiary though most important portion of the painter's creation. Sculpture and architecture *make* forms, which the eye may recognize as they really are, actually existing. Painting, however, *without making* the form, really presents it to the eye; justifying the blind man's remark as he felt first of a statue and then of a painting of the same figure, "if this flat surface *looks like* that round one, then this is the greater art." Yet again, the field of painting is limitless as the universe itself; while the sphere of sculpture and architecture is limited to a few and those single objects, since a tree or a cloud cannot be sculptured, except in bas-relief, which partakes of the nature of a painting.

CHAPTER I.

THE ANALYSIS AND COMPOSITION OF COLORS.

THE student in the art of painting will begin, as the pupil in music or language, or any other branch of education, with practical attempts at the execution of his art. It is the practice which will awaken a sense of the value of rules in his art; and the study of nature and of the means of copying her works will commence and progress together as his taste matures and his power increases. In this pursuit, however, his work will necessarily divide itself into classes. To the mere amateur, or general student, a brief view of these branches of the artist's study in their natural order is essential for the just understanding and criticism of the painter's task.

One study of the painter, in the order of scientific classification, is the analysis and synthesis of colors in themselves; until his eye can detect every variation, however slight, and his hand execute their mixtures so as to copy that variation. A second study is the com-

bination of colors actually existing and seen in nature; to gather from the infinitely skilful painter of all material creation the principles, rather than the details, of his method. His subsequent toil must then be to gain the power not only of executing with the brush copies of Nature's works already existing, but of conceiving and executing new scenes and images arrayed in new hues, shades and tints.

Sect. 1. The Simple or Elementary Colors.

The commonly received theory as to the essential nature of color may be adopted as practically true in the study of the art of coloring. That theory is substantially this: that color is not a quality inherent in and belonging to the colored object; but is rather such a disposition of the particles of a substance that its surface reflects to the eye of the beholder either *all* of and entire the rays of the sun's light, or a certain *part* of those rays chemically decomposed and separated into their elements, or *none* of them. The pure rays of the sun's light, when reflected without decomposition are white; and render substances, therefore, even polished black iron, which reflect them, white. Substances which reflect none of the rays of sun-light are really unseen, and give the impression of black; the color of all things in darkness where we see nothing. Substances that give the impression of colors intermediate between black and white reflect a part only of the light; exhibiting one or more of the elements of which its rays are made up. White is thus the combination of all colors; while black is the absence of all color. The mixture of black and white make *gray*. These three, white, gray, and black, are in the language of art called *neutral*, or negative colors. The positive or *essential* colors, though once reckoned seven in number, are by a later and more exhaustive analysis reduced to *three;* yellow, red, and blue.

In the earliest times the decomposition of the pure white light was observed; that decomposition being caused by the refraction of rays of light in passing through a transparent medium as amber or crystal; and especially when falling upon water, either in its gaseous, liquid, or solid form, as in cloud, water-fall, and iceberg. The rainbow existed doubtless before Noah's day; and it was then "*set*" or *set apart* "in the clouds for a sign;" as the sun long beforehand in existence was at man's creation set apart to a new office.[1] As early as the days of Job and of Abraham the Chaldeans seem to have

[1] Gen. ix. 13, 14, compare Gen. i. 3, 14, and ii. 6.

referred the phenomena of the rainbow to the action of light on the clouds.[1] Kanada, the great Indian philosopher, who lived before Pythagoras' age, divided the primitive colors into seven; including, however, white and black as the extremes, while the intermediate five seem to have been yellow, red, green, blue, and purple or violet, proceeding from white to black. Aristotle argues that light is "superficial," not a quality in the substance of the colored body, but is an effect produced on the eye by agitation of an etherial medium about and on the surface of the body; and he states that this view was held by Pythagoras. He also regards black and white as neutral, since either of them when pure may be invisible, while in admixture they became apparent and positive. He recognizes the fact that the rainbow is produced by the reflection of the rays of the sun from vapor in the air, and argues that the bow is opposite the sun, and half a circle, because in another position of the sun "the vapor will reflect the solar rays, not toward the earth, but towards the heavens."

The analysis of Sir Isaac Newton in 1672, established, as it was designed, not so much the complete analysis of colors in the prismatic spectrum, as the fact that the combination of them is the white light. The seven colors red, orange, yellow, green, blue, indigo, violet, were afterwards by Sir David Brewster resolved into three, yellow, red, and blue; experiment having shown that while each of the other four, orange, green, indigo, and violet, may be separated into different elements by the prism, these three alone, yellow, red, and blue, cannot be thus separated; while, moreover, the synthesis of colors, which is more practical than their analysis, proved that all the other colors seen in nature, or used in art, can be obtained by an admixture in proper proportions of these three elementary colors, yellow, red, and blue. Sir David Brewster also discovered, that instead of seven distinct colors, separated from each other by marked lines in the solar spectrum, there is an infinite variety of hues, shading off into each other by indefinable limits; and he hence concluded that the three elementary colors in the sun's light, though refracted in the main at different angles, are all three mingled in greater or less proportion throughout the spectrum. The important fact thus established, so far as painting is concerned, is, that all hues, shades, and tints in coloring are to be attained by admixture of the three elementary colors; while at the same time

[1] Job xxxvi. 27–30, compare Job xxxii. 2, and Gen. xxii. 21.

these three are so intermixed in nature, as in the solar spectrum, that in none of his pigments can the artist expect to find, as he could not with truth to nature employ, any pure elementary color. It is only an approximation to pure colors which is employed by nature in her own works, or furnished in her materials for artists.

Sect. 2. The Artificial or Compound Colors.

The first and simplest admixture of colors, that with which a child very early becomes familiar, is the union of black and white forming grays. Of these, there is of course, a numberless variety; since any proportion of black, greater or less, will give shades darker or lighter, of a true gray color. Referring to this variety Sir Isaac Newton remarks, "These gray and dun colors may be also produced by mixing whites and blacks." The difference of shade, and even of hue, which may come under the general title gray, is indicated in the name *graios*, or Greek, from which lexicographers derive the English word. Thus Hesiod[1] alludes to the "fair-cheeked Greek women, light-colored from their birth, hence called *graiai;*" whose complexion sallow, ashen, tanned, or florid, was always in contrast to that of the Asiatic, though greatly varying in special hue. It is specially worthy of note, though not remarked by lexicographers, that professional, if not primitive English usage has made a distinction between *gray* and *grey*. The spelling *gray* may with propriety be employed to designate admixtures in which simple black and white are employed. The form *grey* may indicate those admixtures having the same general hue, into which blue and its compounds more or less slightly enter. A common variety of the former is drab; of the latter, lead color.

Turning now to the positives blue, red, and yellow, we find that a rule of harmonious proportion in admixture, fixed as a law of nature for their combination, must be regarded, in order that the true and pure colors intermediate between them be secured. Those proportions are for yellow three, for red five, and for blue eight. The admixture of the three colors in these proportions forms pure white. With reference to these proportionate admixtures, yellow, red, and blue, are called the *primary* colors; and the proportions in which they must be combined to form other pure colors are called their "equivalents."

The union of any two of the three primaries in their proportions

[1] Hesiod Theog. 270.

form what are called the three secondaries; namely, orange from red and yellow, green from yellow and blue, purple from red and blue. A new set of proportions or equivalents is thus established; the equivalent of each secondary being the sum of the equivalents of its elements. When therefore the secondaries are combined to form still other pure colors the equivalent of orange is eight, of green eleven, and of purple thirteen. The admixture of the secondaries in these their proportions, constitutes the three tertiaries; citrine from green and orange, russet from orange and purple, and olive from purple and green. The same order in proportionate admixture will give an endless number of *pure* colors. The admixture of these *pure* colors in *indefinite* proportions give the *dirty* or *impure* colors; among which the browns are the most important. In reference to their effect in nature these colors are called *semi-neutrals.*

Looking at these several pure colors, primaries, secondaries, etc., separately, several points of importance are to be noted. Of the three primaries, yellow is next to white in the order of color; a fact to be specially observed in considering the effects of different colors. Mixed with white it gives the faint hues called straw color, etc. It is the ruling color in the tertiary citrine; it enters largely into the compound colors, buff, bay, tawny, tan, dan, dun, drab, chestnut, roan, sorrel, hazel, auburn, Isabella, fawn, feuille morte, etc.; and it takes its share with red in the semi-neutral browns. Red is the central color; being intermediate alike between yellow and blue as analyzed colors, and between white and black as unanalyzed. It is a leading element in the two secondaries, orange and its relatives, scarlet, etc., and purple and its allies, crimson, etc.; it is the controlling color in the tertiary russet; it enters largely into the various hues of the semi-neutral marrone or chocolate and its relatives, puce, murray, morello, mordore, pompadour, etc., and it is found in a smaller proportion in browns, grays, and other broken colors. Blue is the primary color nearest black. It was an ancient theory, advocated even by Lionardo da Vinci, that blue, especially azure or sky blue, is a mixture of white and black, or of light and darkness. Its tendency towards black as he illustrated, may be seen by looking through a deep valley, or into a cave; or even by taking a view from without of a darkened room through a narrow opening into which the sunlight enters. From the pure white light at the very entrance the color is seen to deepen, until the blue appears in the distance shading off rapidly into black; the last and most distant object of any kind that can throw back any light to the eye, be it

air or earth, reflecting blue as the nearest neighbor to black. Blue is an abounding element in the universal green of the earth's covering; it is the ruling element in olive; and it enters largely into the semi-neutral greys, as slate, lead colors, etc.

Turning again to the secondaries we observe some important relations to other colors. Orange is the secondary nearest to white, being composed of yellow and red. When it inclines to red it takes the names of scarlet, poppy, coquilicot, etc.; and when it tends towards yellow it is gold color. Green is the central secondary, being made up of the two extreme primaries, yellow and blue. Unlike the other two secondaries, all its hues, whether tending to yellow or blue, retain their peculiar denominations as green; for we speak of pea-green and bottle-green; while in every land the foliage of every tree and plant is called green from the lightest poplar to the darkest fir, and from the yellow of Italy and Mexico to the almost blue-black of England and Greenland. Purple is the extreme secondary on the dark side; being made up of the central red and the extreme blue. When it tends towards red it furnishes the colors, rose, crimson, etc.; and when it inclines to blue, it becomes lilac, violet, etc.; and finally near to black it is indigo.

Among the tertiaries citrine is the extreme light color; its largest constituent being yellow, and its least blue. It succeeds first and next to the green of summer foliage as autumn comes on; and as winter approaches, and the hues of nature change towards the orange shade, the citrine is found to comprise a class of colors including aurora, chamoise, etc. Russet is the central tertiary; red being its chief ingredient. It follows in nature the citrine in autumn tints; and includes colors sometimes termed subdued red, red-purple, and even those designated as brown. Olive is the darkest of the tertiaries; blue being its main constituent. In nature it prevails in numberless compounds with green, blue, black, and grey; and its hues are called green, grey, ashen, slate, etc. The olive, for example, of foliage is designated as green or greenish; that of sky as grey or greyish, that of earth ashen, of mountain slate or slatish, etc.

The semi-neutrals are those into which black enters as an element. They are divided into three classes; brown, marrone or maroon, and grey. Brown indicates a class of colors of very indefinite limit. All of them, however, have yellow as a principal constituent; while none are decidedly of a blue cast. There are, for example, yellow-browns, red-browns, orange-browns, purple-browns, but no blue-brown. The class of browns is often made to include dun, hazel,

auburn, etc.; though the pure colors and hues of the tertiaries are really distinct from the impure colors; the latter not being of proportionate ingredients, as are the former. Marrone, or maroon, includes a class of impure colors in which the red predominates, as the yellow in brown; brownish crimson and claret being of this class. The name is derived from the ancient town of Maronea, in Thrace, Greece; whose wine is mentioned by Livy and Pliny as celebrated for its peculiar and beautiful color. From its Greek and Latin usage the word came to be applied in the Italian, the language of art, to a delicate chestnut color; and again by the Spaniards, whose language is most closely allied to the Italian, to the copper hue of the mulattoes intermixed by marriage with the native Indians among the mountains of the West India Islands. It embraces, therefore, as mentioned, a class of colors which are impure, being made up of disproportionate ingredients, and in which red predominates. Grey, as distinguished from gray an admixture in any proportion of black and white, is the head of a class of impure colors in which blue predominates. It is thus the third class of semi-neutrals, brown in which yellow is predominant being the first, and maroon in which red predominates being the second. We have blue greys, olive greys, green greys, purple greys, but no yellow or red greys. This distinction will be found of special importance in studying the grey tints of cloud, earth and water.

The neutral black is never pure in nature or art; for as no spot in the universe is perfectly shut out from all diffused rays of light so there is nothing perfectly black or utterly destitute of color. Black is only used to give darkness in shading; and in admixture with colors it does not alter the hue, it only deepens the shade.

The analysis of colors above considered was understood by the painters of ancient Greece. Aristotle for instance, remarks, "The many other colors besides white and black are multiplied in number by proportionate admixtures; for they can be formed by uniting them together in the ratio of two to three, of three to four, and of other numbers. Other colors, however, are formed by admixture without ratio; having a disproportionate amount of some and an absence of other elements." In both ancient and modern times the admixture of colors by artists, as intimated, is only approximate in actual practice. In water colors, the pigments used approach nearest to the pure and true colors which chemical analysis has unfolded. No one, however, can successfully and readily copy the ever varying hues and tints which Nature wears, except he learn carefully

to distinguish varied colors one from another, and to separate the elements that enter into each compound. No one especially can study the history of painting, from its rudest exhibition in the glaring yellow, crimson and blue, which ancient Egyptian artists used and which attract the eye of the savage and of childhood, till the consummation of the art of coloring was achieved in the mild and mellow tints of a Raphael or a Guido, without a careful preliminary study of colors in themselves considered.

SECT. 3. COMPLEMENTARY AND CONTRASTED COLORS.

Colors when viewed alone, without any reference to juxtaposition, produce different impressions. Yet more; in the setting over in nature of one color against another, and in making men to copy his method in this respect in the chosen hues of male and female attire, the Divine Creator intimates that He has made our nature to demand contrast and complementary proportion in the colors constantly before us. The blue sky and green foliage, the grey clouds and the brown earth, the flowers with their endlessly varied hues, speak of the provision for a want in us; while the gay and flaunting yellow, crimson and blue mingled in the same dress worn by the Oriental chieftain, and the nice adaptation of not only cut but color in dress to stature, figure and complexion of cheek, hair and eye, practised by the Parisian *modiste*, show that this demand in human nature takes active means to supply its cravings. In its higher applications to the art of painting, this demand of our nature has been the study of the ablest natural philosophers; Aristotle, for example, observing that "the colors most accurately proportionate in their admixture, as purple and light-red, are the most delightful colors."

The complement of a color, strictly speaking, is that which it lacks of being pure white. Thus the complement of the primary yellow is an admixture in due proportion of its two fellow elementaries, red and blue. The complement of the secondary orange would in like manner be a proportionate admixture of green and purple. The study of complementary colors relates directly to scenic and decorative painting; but yet it has its higher applications; and M. Chevreul, Superintendent of the dyeing department of the Gobeline tapestry works at Paris, at which curtain hangings for all the palace walls of European sovereigns are woven, has presented a long list of coupled and complementary hues: specimens of which are yellow and indigo, red and bluish-green, blue and orange-red, orange and azure-blue,

violet and yellowish-green; from which the general student in art may derive profit.

That the Creator designed to maintain an order in the variety he has established in the colors of the natural world, is manifest to the most casual observer. The clear sky is one vault of unvarying blue; and, as if to compensate, the complementary yellow and red predominate on the earth, botanists having remarked that there are very few blue flowers, and those chiefly poisonous. The black storm cloud is skirted generally with a pure white; and the glowing red and yellow of the evening sunset in the west is set off by a greenish grey in the East.

That our nature is formed to be in accord with the law of complementary colors seems to be attested by this singular fact in human vision. If any one of the pure colors be placed for a time before the field of vision and the eye then be turned to look on pure white, it will see not the white but the complement of the color just before removed. If, for instance, the eye has been fixed on a red wafer, when suddenly turned to look upon a white page it will have a distinct impression of a circular spot on the white page of the same size as the red wafer, and of a bluish-green color, the complement of the red; and so with other colors. It seems apparent, therefore, that the nerves of vision have a deadening influence produced upon them by a continued viewing of the same color; so that even the health of the organs of vision, as well as the demands of our intellectual nature, have been adjusted to the law not simply of variety but of compensation in colors.

It is not necessary that differing colors in nature be fully complementary, however, in order to be pleasing by their variety. Contrast, which relieves and delights the eye, exists where there is less than a complement in the colors placed by the side of each other; and as resemblance and contrast in the association of our ideas are appointed to hold our intellectual apprehension and enchain our interested attention, so colors charm the eye either by their resemblance or their contrast. Yet in nature and in art the principle of compensation lies at the foundation of the contrast in colors that are adapted to the eye. The purple flower has generally a centre of yellow; and usually the purple inclines to blue when the yellow is inclined to orange, and to red when the yellow inclines to green. Blue is discordant with green or purple; but the orange centre of the blue flower makes a pleasing accord. Green, the central secondary, is a good offset to almost all the colors of nature, among which it is every-

where distributed; while the citrine the first tint of autumn as its green is fading, and the russet that follows, have their place in the harmony of nature. Nature courts everywhere and at all times a study of its shifting colors that her law of preserved compensation may be traced.

Sect. 4. The Distinction between Hues and Tints; and the Nature and Laws of Tone and of Harmony in Coloring.

In nature there is no sharp line running between distinct, pure, or complementary colors, marking off each by fixed limits, so as to separate one from another. There is a gradual shading off, as in the rainbow, of one color into another; and, what is more, there is a universal overlapping and constant intermixture of colors. The reflections of the different hues of sky, cloud, earth and water, are so thrown upon each other in the glow of the evening sunset, that language seems to lack words by which to depict the varied and ever-changing coloring. Hence have originated the words shades, hues, and tints, as applied to single objects in a picture; and the terms tone, expression, harmony used to characterize the special effect of the coloring as a whole. The common usage of even artists themselves does not always preserve the distinction of the former class of words; and upon the employ of the latter, the great teachers of art differ.

The word hue is properly employed to designate the proportion of any one color that enters into a picture, and shade to express the degree of darkness or light given to that color; while the word tint refers properly to the presence of a foreign color intermingling with, or rather thrown upon the principal color. Thus the color blue, has as its shades, dark, medium, and light; we designate articles, called by the common name blue, as of indigo, azure, or violet hue; and we speak of the rosy tint of morning, of the purple tint of evening, and the brown tint of autumn on the distant blue hills. Shade is deepened or lightened by the addition of black or white to the principal color; hue is varied by an increased proportion of any one of the elementary colors; and tints are thrown on portions of a picture by the rapid and light touches of the artist's brush tinged with a contrasted color.

The words "Tone" and "Harmony" have as intimate a relation to each other in their special application to Painting as they have in their original meaning. They are terms borrowed from the kindred art of Music. The word Tone, not only in the original Greek and

Latin, but in the varied languages of modern Europe, is used to express the adaptation of sounds in music to the sentiment to be conveyed; as when we say of a piece of music, "Its tone is grave and serious and it should therefore be performed in a deep low tone of voice." The art of Medicine has borrowed the word; and physicians speak of "the tone of the vital organs." Raphael Mengs illustrates the idea of Tone by allusion to the common expression, "the tone" of such a painter, or of such a work, is "warm" or "cold," "grave" or "gorgeous;" the Italian artists, from the prevailing aspect of nature amid which they live, using the warm colors yellow and red, and the German painters more commonly the cold colors blue and black; Rubens making his canvass always glow with the gorgeous colors orange and rose and purple, while many of the Dutch painters delight in the sober and solemn aspect produced by the greys. Ruskin, who writes as a critic, rather than as an artist, defines tone as consisting in two things; "the just relation of the *shading* of all the parts to the chief figure" in the picture; and "the just *coloring* of the lights and shadows in their relation to each other."

While Tone relates to the entire aspect of a picture, taken as a whole, "Harmony" relates properly to the relation of the parts to each other, which as a whole produce a given effect. Raphael Mengs, treating at length upon Harmony as he does upon Tone, says: "The artist will observe, then, that by Harmony we do not mean what is usually signified by this term; but we adopt the metaphorical term to designate what the Italians in like manner call *accords;* both words indicating an effect in painting corresponding to that of Harmony or Accord in music. As Harmony in music produces an agreeable effect on the auditory nerves, so does Harmony in painting on the optic nerves." Care in distinguishing between accord and harmony seems unimportant in this illustration; although the relation of the laws of sight to sound is recognized. As to the management of colors so as to produce harmony, he says, "The lighter colors have more effect, because they produce quicker vibrations upon the organs of vision. The rays reflected from light colors have the same effect as the direct rays of sunlight on the eye; their impression is more forcible, sometimes even painfully powerful. They should be used therefore in the figure which is designed to arrest the beholder's attention as first in importance in the picture. The nature of the subject of the picture must thus determine the artist in the selection of his colors." "The purest and most glaring colors, as

possessing more strength than the pale ones, must be used in principal figures. The use of either white or black has a tendency to subdue and diminish the power of the pure or primary colors; while the latter also darkens all these colors; and when used in the shading completely controls their power." He thinks that true harmony may be secured by using either simple white or black in giving the gradation necessary to Harmony in color. Rembrandt is cited as eminently successful in securing the finest gradation of hue by simple black; while Boccacio admirably accomplished the same with pure white.

Both the effect of Harmony, and the means of attaining it by one color have their illustration in the wonderful effect which can be produced by a single instrument as the violin; or by a single voice in a solo. The study is the greater when many colors are to be used all in harmony; as it is when musical accord is to be secured in the immense orchestra and choir combined in performing one of the master-pieces of Haydn or Mozart. The skill to appropriate the wealth contained in all the colors, and to make each conspire to one great theme by its appearing in its proper place, its proportionate quantity and just force, is the triumph of Harmony or Accord in painting.

Though Landscape Painting claims the highest attention to harmony, yet interior views and even single figures require the aid of its spell. The hues cast by in-door and out-door light, by bright sunshine and by dense cloud, the tints of morning and evening and of successive stages of daylight and twilight are endlessly varied; and they throw their peculiar tinge on every object and on every part of each object in the entire landscape. When, now, any one of these myriad phases of light is chosen by the artist, he must retain the recollection of each separate hue and tint belonging to that selected moment, and preserve each variety throughout his entire work; for thus alone can harmony be attained.

Ruskin thinks that the chief superiority, which he claims for the modern over the ancient landscape painters, is to be found in their successful attaining of the two requisites of Tone described by him; while his multiplied criticisms upon varied details of drawing and painting relate to methods of securing just tone by a carefully wrought harmony. His numerous suggestions as to the method of executing with the pencil and the brush the varied forms and shadings of objects having different characteristics as refracting and reflecting media, his nice discriminations between the hues, tints and shades of light streaming through the clouds, glancing from the waters, and resting on the soil, his pencil tracings of outlines of differing foliage,

of ragged cloud edges and of multiform granite boulders, will group themselves in the mind of the careful student under the topics here considered.

CHAPTER II.

GENERAL PRINCIPLES AS TO THE EMPLOY OF COLORS IN PAINTING.

As in drawing the pupil naturally begins with tracing the outline of the object placed before him, and thence proceeds to the nicer processes of shading, perspective and chiaroscuro, so the student in painting may be expected to begin with the simple colors of single objects, and thence to proceed to the accomplishment of the higher ends of painting. Among these higher aims in coloring are the following: the securing through colors of the special æsthetic effect desired by the artist in his work; the attaining of that higher order of perspective called "aerial perspective" by the means of color as well as of proportion in forms; and finally that climax of art in landscape painting, the successful execution of the perfect blending of shades, hues, and tints in the distant prospect which constitutes chiaroscuro.

Sect. 1. The colors of Objects in nature to be copied in Painting.

The analysis of colors, in themselves considered, is only preparatory, of course, to the work of tracing their distribution in nature; whose face is to be copied by the painter. No study can be more interesting, as none can be more practically profitable to the student of art, than the minute and careful observation of Nature in all her forms. Ancient philosophers and poets, as well as painters, gave minute observation, not only to colors ordinarily marked as distinctive, but to those slighter differences which escape the common eye. Thus Aristotle, in his Problems, asks the question, "Why have white men and white horses for the most part azure eyes?" Ovid again, in his Metamorphoses, alludes to the "blue" aspect given to the white bodies of nymphs as they float "in the wave."

The observing student will remark with surprise, that scarcely anywhere can a pure color be found; while the combinations and admixtures of different colors are almost infinitely varied. The

snow is a pure white, the clear sky a perfect blue, the grass a true green; but interspersed among and reflected upon these are a thousand differing shades, hues, and tints. Of these, the ordinary observer is not really aware, though he looks directly upon them. The painter, however, learns to classify not simply the varied forms, but the peculiar colors of varied foliage; all of which the farmer calls green, little dreaming of the study to which the artist has been subjected in order to make his country-trained eye recognize the familiar tree by its special hue. The upturned soil may have received from the poet the indiscriminate designation of brown; and yet even the common farmer would expect in the artist's picture all the different shades which indicate each variety of element, and of condition, entering into the composition of the exposed earth. The mariner never has separated in his mind the white foam on the crest of the wave, the light pea-green of its head, the deep blue of its body, and the dense blackness that reigns in the chasm at its foot; but the artist must have analyzed all this succession of colors for the eye of his sea-bred critic, or he can never satisfy him by his work. The hunter, the drover, the hostler, may never have thought to describe the nice varieties of color in fur, chestnut and dun, tawny and sorrel, every specimen of each class unlike to its fellow; but he expects the artist to understand and describe every varied hue, and never to paint two animals alike. The mountaineer may never have seen a painting; but he is the quickest of all men to note whether the artist has caught the rosy tint of morning on the mountain peak, the slaty grey of its rocky pinnacles, the lively blue of its sunlit slopes, the sombre of its shaded gorges, and the deep green skirting of its base. The artist must have *seen* all that these men in varied pursuits have looked upon; and he must have done more than they, he must have mastered the secret methods by which all he has seen is to be reproduced.

The painting of a single green leaf, of an orange, a cherry, an apple, a plum, especially of a basket of fruit or flowers, gives a study in the richest and livelier colors, and that in their variety. A bunch of Autumn leaves selected from the chestnut, the maple, the oak and the ash, gives a select series of the soberer shades. The study for an hour by an observing eye of any single landscape, to remark the hues of spring, summer, autumn or winter scattered over it, or a rapt gazing through an evening twilight at the shifting tints that stream from the setting sun, gives the widest range for this inexhaustible study.

Two centuries even before Newton had begun the work of analyzing the colors combined in the white sun-light, not only had the fact but the cause of the fact of the varied colors in nature been carefully studied and set forth by Lionardo da Vinci. Of the source from which he derived his clear and comprehensive knowledge he himself thus gives an intimation in his teaching for other artists; "One painter ought never to imitate the manner of any other; because in that case he cannot be called the child of Nature, but the grandchild. To have recourse to Nature, which is replete with such abundance of objects, is always better than to go to the productions of old masters who learned everything from her." As the very last of his three hundred and sixty-five chapters he gives this precept, urging the constant review and widening range of these studies in Nature; "Whosoever flatters himself that he can retain in his memory all the effects of Nature, is deceived; for our memory is not so capacious. Therefore consult Nature for everything."

In Lionardo's application of his general principle to coloring, suggested methods of copying Nature are intermingled with studies of her hues. As the foundation of the modifications of hues in Nature he teaches the distinction between transparent and opaque colors; through the former of which other colors underlying them can be seen, while the latter hide entirely an opposite color beneath. He illustrates the effect of transparent colors by the use of colored glasses; whose tints, when held between the eye and landscape, fall upon the varied hues of nature and produce in each a special change. This effect is observed in smoke; which before a black sooty background appears bluish, but higher up of a reddish brown. So lake, a pigment extracted from dark red clay, laid on blue turns it to violet; while yellow upon blue changes it to green. To be preserved pure, each transparent color should be laid upon a white ground. In nature this effect is produced by the reflection of one color upon another. If the face of a red object be so presented to the sun's rays as to reflect them upon another object, the reflected rays will take on a red hue; making the object on which they fall, if itself red, of a brighter shade; if yellow of an orange hue. Again, shade, the cutting off of white light, not only darkens but varies the hue of an object; an effect which some ascribe to the varied colors of shades themselves; but which really results from the fact that all colors when the light is cut off from them gradually approach one another in aspect on account of their indistinctness, until they are lost in one

common black; as is illustrated by looking in through the open door of a darkened Church at the pictures upon its walls.

A variety of illustrations from objects whose color depends on shades and hues reflected upon them are given in detail. The green of trees and plants, though precisely that of the grass-field, appears darker; having more of blue from the atmosphere intermingled with it. At sea the blue sky gives the water a blue tint; looking from the shore it is of the color of reflected objects near, and dark at a distance when ruffled so as to produce no reflection; and in general water is of the color of surrounding objects. Smoke is lighter at its base and darker above; yet it hides objects more below than it does above, because it is more attenuated as it rises; and it is most transparent looking at objects between the eye and the sun, and most dense when the eye is between the sun and the object. Dust and fog are darkest at the base and lighter above; but follow the law of smoke in the second particular mentioned. Rain beginning to fall darkens the air most opposite the sun; all objects seen through it are indistinct; but those objects seen through it opposite the sunlight are least obscured because the rain takes only the shadows from them, while it takes both the light and shadows from objects between the eye and the sun. In Autumn the leaves of the oldest branches of trees and of particular plants fade away and change color first; and each has its own special color. In winter near the sea-shore and in southern latitudes the aspect of the earth and of vegetation differs from that of northern regions where the dark firs are seen among the white snow. Desert shrubs and trees have more boughs and twigs of a sharper outline than trees covered with foliage and widened by its spread. Wind has the effect not simply to bend the limbs of trees by its sweep but to darken and dim the aspect of all objects by the dust it raises. The shadow of a bridge can never be seen on the surface of clear water, but its image is reflected as from a mirror; the shadow is only seen when the water is too turbid to reflect the image. The distinction between fire-light, or any other artificial light, which is reddish-yellow, and the sun-light which is white, is also to be observed. It is best remarked at evening or morning twilight; or in a darkened room by day when the sunbeam is allowed to come in through a small aperture, and is contrasted with the light of a candle. The yellow of the lamp-light falling for instance on blue makes it green.

Among modern writers Ruskin has interspersed his works with varied observations upon the colors found in nature; and he has

criticised the works of ancient and modern Landscape Painters as to the truth and success of their execution of Nature's tints. Some of his hints are but the repetition of what Lionardo and other early painters had long since noted; while some of his criticisms, as of course was to be expected, have been objected to by able artists. In his work on Drawing he mentions that grass has more of a yellowish hue according to the strength of the sunlight upon it; a fact which he thinks has not been sufficiently noted; though Lionardo manifestly had referred this to the fact that green is made up of yellow and blue, and that a dark shade brings out the blue and a strong light the yellow. In the color of water he remarks these three things; first, the attenuated tops of waves are white because the light is perfectly seen through them; second, the color deepens in the body of the wave according to its thickness; and third, the color of objects seen through the waves, or of its shadow reflected from them, is a complementary color. The black hulk of a Venetian gondola casts a dark green shadow; a white object in the water appears blue; and the smooth surface is red or violet, or emerald-green from the reflection of sunset clouds. To obtain cloud tints, the great Venetian painters made the ground blue; then, when this was dry, they streaked it with golden brown, which with the blue, gave an olive green. On a careful examination, he states, that the flowers which are generally regarded as blue, are found never to be of a pure blue.

Leslie has some scattered observations worthy of note in this same department of the painter's exhaustless study. As to the difficulty of the study he says, "Form may be measured; its anatomical structure may be investigated; its lines are not changed, as tints perpetually are, by the shifting light of day or by the accidents of reflexes. If the beauties of form are subtle, those of color are evanescent; and combined with *chiaroscuro*, from which in Nature they are inseparable, they become the last refinement of the Art, as it addresses itself to the eye." As specimens of the liability to oversight even by the best artists and critics in observing real appearances, he cites the shadow made by a beam of wood in Turner's "Dido building Carthage," which would require the sun to be much higher than it really is in the picture; and again he reviews Ruskin's criticism on Canaletti's representation of water in a canal, ruffled into ripples by a breeze where it is open, while "three hundred yards away all the houses are reflected as clear and as sharp as in a quiet lake;" the critic forgetting that a row of houses would so shelter the water of

a narrow canal that its surface would be thus mirror-like behind them. He suggests again that artists "rather theorize than observe, who, when they give a yellow tinge to all objects in noon-day sunshine, infer that so it must be because the local color of the sun is yellow;" while "in fact, excepting in the morning or evening, white, in sunshine, is only a purer white, and blue receives not the least tint of green:" as to which statement it is perhaps to be observed that the season of noon-tide's pure and clear white light is rarely chosen by the landscape painter; and that if it were the artist's chosen hour, the pure white sun-light without any reflex from colored objects around could not anywhere be secured. The little failures of critics themselves to regard all the circumstances conspiring to modify colors in nature is no indication of want of skill and care in the observer, but of the inexhaustible variety in nature.

Sect. 2. The Relation of Color to Form; and the Demands of Anatomy and General Symmetry in Painting.

In drawing, mere lines present form to the eye. A pencil line in the form of a circle gives the impression of but one dimension; the dark crayon being virtually a shade, causing the appearance of a line without breadth or thickness. If a faint shading be traced evenly over the entire area enclosed by the circular line, that area will have the aspect of a surface, having two dimensions. If again, the shading be traced upon one side only of the circular area the line of faintest shading being a curve leaving more than half enlightened, then the impression of a third dimension constituting a sphere is irresistible to the beholder. In either case it is the black line, giving the impression of an intervening body cutting off the rays of light, that conveys to the eye the outline of a form.

The same cause substantially produces the impression of form when instead of cutting off white light from a white ground, of which the black crayon line is a copy, a shade is produced either by cutting off white light from a colored object, or colored light from a white or colored object; which effects are secured by coloring proper, or painting. When white light is thus cut off from a colored object the impression of form is even more distinct in the case of shaded white objects; as the sphericity of the sun's disc is more manifest when its face is reddened by intervening haze than when white in a clear atmosphere, and as a snow-capped mountain top, a chalky cliff, or any white object is less distinct in its projection and rotundity than when set off by some color. The painted portrait ought therefore to

present truth even in form more fully than a crayon drawing or an engraving. The common impression, true of the work of ordinary portrait painters perhaps, that a photograph, or even a pencil drawing copied in an engraving, gives personal features with more accuracy than does an oil-painting, arises doubtless from the fact that while the photograph, or even the pencil-drawing, may give the outlines of form accurately, no skill of art can attain like truth in coloring. If, therefore, the coloring be far from accuracy, it positively takes from the impression of truth to nature, which correct form would, if alone, afford. If, however, the coloring be that of a master, it will enhance the vividness with which form strikes the eye.

There are two causes, probably, of the definiteness which color gives to our impression of form. In the first place, the idea of substance is more vividly presented when color is added to a form. Spectres are always conceived as white or colorless; for the very idea of color in cheek or mantle would be conceived as an attribute of a real being; while too a cloud, or any other object known to be real and material though attenuated and evanescent, gives a stronger impression of being substantial when tinged by some vivid color. In the second place, as shade alone indicates the projection of the third dimension or that perpendicular to the line of vision, and as color alone even without shade gives the impression of substance, when these two unite in an image executed by the painter, the impression of form is enhanced by the combined appeal addressed to the eye by shade and by color, as distinct yet conspiring attributes. It may be added that the almost undefined line wrought by the brush, so different from the sharp line with a definite limit executed by the pencil, perhaps aids the mind to positiveness though not definiteness of form; since the eye in beholding objects in nature is fixed on the central substance, having only a general observation of the outline, which, under the painter's brush seems as in nature to melt into the substance of other objects around.

While the relation of color to form is important in painting every variety of objects, it is especially to be regarded in the execution of the human figure in portrait and historical subjects. The pupil in drawing and sculpture, having only form to represent, may study the human figure in plaster casts alone; but the painter must have as his model the human form itself, or some former master's work founded upon such a study. The sculptor may indeed resort to living models; but the form alone is his study, to the disregard of both color and shade. The painter, however, having first attained to the sculp-

tor's study in executing his preliminary drawing, is now to go beyond that attainment, and seek to be master of the colored shades which alone assure the beholder of the correct anatomy of his figures.

The great painters of ancient as well as of modern times have regarded this principle alike in their teaching and in their practice. Parrhasius and Apelles painted from living nude models; the former indifferent to the piercing shrieks of the captive old man on the rack as he sought to catch the flushed or livid hues, as well as the contortions of dying agony; and the latter insensible to the blush of shrinking modesty in his lovely maiden captive, while he only thought of transferring the tints of that blush to his canvass. Lionardo has the following among his hints for students upon the study of Anatomy as indicating the relation of color to form. "Black drapery will make the flesh of the human figure appear whiter than it really is; white will make it appear darker; while yellow will render flesh more highly colored, and red paler than it is." Vandyke understood this principle thoroughly in his portraits; choosing, for instance, black velvet as the dress of a lady whose complexion he wished to make of a specially delicate tint.

Sect. 3. The Relation of Color to Light and Shade, and the execution of Chiaroscuro in Painting.

Color brings out form and heightens its effect not only in portrait but in landscape painting. The half-light and half-shade, or chiaroscuro, which gives such a delightful softness to objects seen in the distance, becomes an enchanting charm, when, as at sunset, all this agreeable delicateness takes on the richest coloring. As in portrait so in landscape painting, shades are to be studied cast by colored as well as by white lights. With the painter, therefore, the study of chiaroscuro has respect to coloring as well as to shading. In drawing perspective precedes chiaroscuro, because the diminution of size by distance is the fundamental principle; to which difference of shade is subordinate. In coloring, however, the main aim is to give to the drawing, made the foundation of all painting, the hues, shades and tints of nature; the securing of the tinge that indicates distance being a special means to this general end.

Art Critics agree in stating that the true study of chiaroscuro began with the scientific Lionardo da Vinci, and that it attained its perfect majesty in Michel Angelo and its magical perfection of life in Correggio; three artists of the same age. Lionardo conceived the idea of concentrating the central radiance upon the central figure;

gradually diminishing the light upon remoter objects; and his precepts show the exhaustive method of his study. He suggests as an illustration of the effect of colored shades that a light blue object, as a cylinder, be placed between a black and an opposite white wall. One side of the cylinder will then appear much darker than the other; the shade varying throughout the entire semi-circular front exposed to the view. To execute this gradation of shade, the artist should first paint the two walls, one pure white and the other pure black; then, placing on his pallet pure blue, he should take three parts of black and one of blue to begin the dark side of the cylinder, constantly adding more blue to this mixture, until pure blue completes the front view. In general, he says, "The shadows of any color whatever must partake of that color more or less as it is near to or remote from the mass of shadows; and also in proportion to its distance from or proximity to the mass of light. The shadow of every white body must have a tinge of blue, which it receives from the air; and the shadows from objects of any color falling on a white ground will have more of the tinge of the object than when those shadows fall on a darker ground. When one white body terminates on another of the same color, if one be in itself of a different shade, the front object will readily be made to detach from the back one by care in copying that tinge; while, if there be no difference of tinge, the rounding of the front object where it terminates on the back one should be made a little darker than the general ground; because, as may be seen by holding one sheet of white paper a little before another, there is an edge of shade cast by the foremost upon the hinder sheet, which makes it stand out from it. In general, a light colored object before a light back-ground looks darker than it is; while the same object before a dark back-ground looks lighter than its natural shade. Colors reflected are less brilliant than the same colors seen directly; its brilliance depending also on the distance and the smoothness of surface of the body which reflects the color. No reflected color can be simple, even if there be but a single color reflected; and when two or more reflections of different colors fall on the same body, the intensity of each, and therefore the resulting tinge will depend on the character, the intensity and the distance of each of the several reflexes; and all are modified by the blue of the air through which they pass. The light from flesh color reflected upon flesh color, on account of its nearness and lively character, makes the shaded part of a far redder hue." Lionardo's exhaustless mine of suggestive hints as to the methods of observing and copying

varied reflexes, some of which Goethe has developed by personal observations, and his instructions as to the means of making varied colors meet and blend with each other, indicate what treasures of independent wealth are open to every zealous student of art.

Among English critics, Fuseli regards Lionardo's development of the study of colored reflexes as the climactic work marking the revival of art. He pronounces the head of Jesus in the Last Supper of Lionardo, from which as a centre the light is made to radiate, the first, as it is one of the most finished masterpieces of chiaroscuro; he characterizes the boat of Charon, the centre of M. Angelo's Last Judgment, as the perfection to which Lionardo's teaching led the bold genius of his pupil; and he counts the entrancing fascination of Correggio's sky the most perfect illusion of modern art. Ruskin brings the subject of chiaroscuro into immediate connection with that of Tone or Harmony; the two meeting in the just relation, not only of the shades but of the colors of the shadows, to the central figure. He dwells on the distinction between the action of clear white sunlight in bringing out local tints, and that of the light of a clouded sky in modifying local hues; citing the palpable difference between the light out of doors, and that coming through a window. He remarks, "Nature gives limited or full light, soft or deep shade; much tender light in clouds and water, and much tender shade in foliage and buildings."

Among American critics, Leslie, though an ardent admirer of Raphael, places him low in the rank of colorists, because he did not study and practice the art of chiaroscuro as developed by his contemporary Lionardo. He observes, "The discovery of chiaroscuro has much increased the difficulties of coloring; and unfortunately, ever since the time of Raphael, indolence in a study so difficult has been able to shelter itself under the example of him who was indolent in nothing that belonged to the art." He dwells particularly on the importance of blue in the execution of the coloring of nature, since this is the color which all rays of light must take on in passing through the air; and he cites as a specimen of its beauty in contrast a gilded vane upon a clear blue sky.

Sect. 4. The Relation of Color to Perspective; and Aerial Effects in Painting.

Aerial Perspective, or the indication of distance from the appearance of objects seen through the air, has a relation to drawing; but it has a closer connection with coloring. The means by which we

judge of distance are properly three; first, the diminution of size in objects of fixed proportions, which leads to the introduction of the figure of a man as a measure into landscape drawings; second, the number of objects intervening between the eye and a distant object, the absence of which on the water makes us always misjudge of distances; and third, the dimness of outline which distance naturally produces. The latter of these has relation directly to Aerial Perspective; and this is to be copied in pencil drawings as well as in painting. The dim outline of a near object seen in a fog makes it seem distant; and the pencil may copy without the aid of color this indistinctness of contour. The study of *chiaroscuro* in its relation to color immediately suggests that the compounded tints of many different reflections on a mountain-side, as well as the azure hue caused by the body of air intervening, may be seized upon by the painter as a means of indicating great distance.

Lionardo after treating at length of Linear Perspective, introduces a division of his work entitled "The Perspective of Colors;" and the following are among his suggestions. The lighter a color is in nature, the lighter it will appear when removed to a distance; but with dark colors it is the reverse, since the blue of the atmosphere lightens colors darker than azure, and darkens colors lighter than itself. An object of the same color, with another behind it, has its edge, according to the direction of the light, either darker or lighter than its back-ground; this difference, as in folds of drapery, when copied by the painter, will make the one stand out before the other; but care must be taken that the outlines be made more or less precise according to nearness or remoteness. As a dark object appears lighter the farther it is removed from the eye, the foot of a column or distant mountain appears less distinct, and hence farther off, than their top. The blue on distant mountains is the color of the air intervening; the green of foliage appears darker, having more blue, when distant. Colors change more from the intervening air when seen on a level with the eye than when seen from an elevated height; the air being denser in its lower strata, and therefore imparting more of its own color to objects seen through it. The colors of the central figures should be pure and simple; and as the objects retire they should partake more the color of the horizon. When the sun tinges the clouds on the horizon red objects which are bluish from their distance will partake of a mixture of azure and red.

Lionardo illustrates the distinction between linear and aerial perspective by their effects. "A thick air interposed between the eye

and any object will render the outlines of such object undetermined and confused, and make it appear of larger size than it is in reality; because the linear perspective does not diminish the angle which conveys the object to the eye. The aerial perspective carries it farther off; so that the one removes it from the eye while the other preserves its magnitude. To practice himself in executing the Perspective the artist should select in the country several trees of the same kind, but at the distance of a hundred cubits, or about 150 feet, from each other; and should then draw and paint each side by side, with their color as modified by the different distances. He may select a cloudy day, and thus secure both the indistinct outline and modified color of distant objects."

Among moderns, Ruskin has treated largely of Aerial Perspective, in connection with Tone and Chiaroscuro. "Aerial Perspective" he defines as "the expression of distance by *any* means; by the sharpness of outline or by vividness of color." "The old masters" he contends, "made a sunny sky a clouded one." He calls attention to "the distinction between the action of white sunlight in bringing out local colors, and the same light colored by the clouds so as to modify local tints; as windows soften the light's brilliancy on objects in a room." He argues, "it is not tint, but depth and softness that represents distance. A mountain near is green or gray; afar off it is purple. A yellow box is soft yellow at a distance. Distance alone only softens colors. The color of the sun on snow, however, is as intense in the distance as it is near at hand." The subject, however, is exhaustless; and these hints of the best Art Critics are only specimens to direct the observing student.

Sect. 5. The Relation of Color to Human Sensibilities; and the Address of Varied Emotions by Painting.

Colors both in nature and art, through the laws considered, instruct the mind; they also affect the sensibilities by the æsthetic impressions they were designed to produce. This influence is seen in the child or savage, in the philosopher and the unlettered man alike; the inspired wise man declaring the truth universal, "A pleasant thing it is for the eyes to behold the sun." Poets appeal to this law of the sensibilities, by the general reference to nature as dressed in robes of lively or gloomy hues. It is the artist's office, so to analyze both these effects and their causes, as to be able to copy the special hues which produce on the human organism special impressions.

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notice this law. The dark colors in general are expressive of gloom, and the light of cheerfulness; and hence when employed by the artist they produce the impressions of which they are the index. Black therefore seems to have been naturally chosen as the garb of mourning; and the gathering of the black storm-cloud, the darkening of evening, and funeral drapery, instinctively beget gloom. White, on the other hand, appears as naturally to have been chosen to be the emblem of joy, at marriage ceremonies, feasts and festivals. It has also been selected as the symbol of the peace allied to joy, conceived to dwell with purity, embodied in priests' vestments; while, even as the drapery at a child's burial, this higher idea of innocence and joy prevails over the lower sentiment of corruption and gloom. The positive as well as the negative colors have also their æsthetic employ. The sky, the cloud and the mountain, distant and uncompanionable, take on blue and the graver hues; the flowers springing close at our feet delight in red, yellow, and the lively tints of cheerful intimacy; while the green's quiet relief is the carpet on which the eye most rests. Man's severer life of out-door toil makes him select the graver colors for his garb; while woman chooses the gayer hues for her less wearing life and in-door adornment. Even the arching "bow in the clouds" seems to speak of the alternating lights and shades and the passive intervals of life, when it is observed that the gloomy indigo, violet and blue form but its earthward ring, that the cheerful red, orange and yellow are the heavenward circlet, while the two are separated by the quiet and soothing green.

Philosophy finds difficulty in discriminating at times between the dicta of fashion and the teachings of true culture in matters of taste. Fuseli remarks, "Glare is always the first feature of a savage or infant taste;" a sentiment illustrated in their first works of art as well as in their dress. Yet, European and even English taste clings to gold and scarlet as the dress appropriate to royalty and the court; and it doubts the legitimacy of the American use of black as the garb appropriate to civic ceremony and social festivity. The taste of the child and the savage prefers the essential colors, yellow, red and blue, addressed to the eye; as it does the whole tones on a pipe of seven notes addressed to the ear; and this preference is in one sense nature's voice. But true culture leads to the love of demi-tints and half notes, and of combination and chromatic approximation in hues and tones. It certainly is a mark of semi-civilization when the Oriental chieftain flaunts woman's gaudy colors in his robe and turban; and it must be set to the account of advancing civilization

when a late Turkish Sultan exchanged that glaring costume for the plain dark-blue frock-coat and pantaloons now worn by the highest officers of state around the golden throne of the Sublime Porte. Still it need not appear surprising that even in the galleries of the Louvre, since in the living court pageant of the Tuileries the same rule of judgment prevails, the painter who excels in gaudiness of coloring should outshine, even in the esteem of intelligent critics, the perfect master in quiet landscape tints; and that Rubens should outrank Lionardo in popular Parisian esteem.

Practical writers on art have sought to apply these suggestions of philosophic thinkers. New and more extended analyses of æsthetic effects are made as the field of art in painting widens; and practice refines as culture liberalizes. The grave and gay of drapery and costume in scenic and histrionic decoration are refined into the warm and cold, the subdued and the rugged of landscape painting. The decorations of rooms, one having a cold northern or a shaded exposure relieved by hangings of a lively hue, and another a warm southern or a sunny aspect offset by furniture of graver tone, prepares the way for the greatest masters; men whose works are an embodiment of the laws of æsthetic power in art. The sunny glow on the "glistering white" of the robes of Jesus, of Moses, and of Elijah, in "Raphael's Transfiguration," the dreary "blackness of darkness" shrouding the condemned in Angelo's "Last Judgment," and the subdued and mellow evening radiance falling on the faces of Jesus and the "beloved disciple," in Lionardo's "Last Supper," irresistibly and insensibly arouse, inflame and subdue the beholder to the sentiment of each separate scene. Color even more than form speaks in art to the sensibilities.

Sect. 6. The Relation of Color to Design and its Special Applications in Painting.

While design in drawing, sculpture and architecture has regard to form alone, in painting it has a relation to color also. It is here that the two arts of special adornment, sculpture and painting, are brought into special contrast. Painting like sculpture seeks the three ends of private ornament, of civic memorial, and of religious impression. Painting, however, is an in-door adornment; being excluded from the field of out-door art, such as funereal or civic monuments and landscape ornamentation. It has, however, its own field; from which sculpture is excluded. An altar piece, or a mural tablet may be in sculpture; but the broad field of historical illustration, the

boundless expanse of landscape representation, and the pervasive panorama of wall and ceiling decoration which may bring the myriad life of a city into a single chamber, belongs to painting alone. In the field, therefore, wherein design is to be exerted, painting has its special superiority.

It is, moreover, a higher order of design that can be sought in painting; and in many respects its power to produce the effects of art is superior to that of drawing or sculpture. The ablest artists have taught, as we have seen, that an engraving which is only an artificially executed copy of a drawing, fails in its designed effect unless the engraver have the genius to give to his work those speaking touches which go beyond the mere enunciation of form, and furnish an expression kindred to that of color; an admission that the brush has its own special power of appeal, which the pencil may seek to imitate, but cannot realize. There is, doubtless, force in the view of Guizot, already alluded to, that sculpture will fail in the effort if it attempts to give anything else than the expression of that strength and beauty which belongs to objects at rest; a view which leaves the whole field of action in the representations of art as the peculiar province of painting.

While in these general respects, relating to the field of its exercise and the character of the effects it seeks, painting is a superior art, in each of the special parts of the act of design painting is the art of arts. The work of *conception*, the first part of design, which with the sculptor ends with the form of an ideal, in the painter embraces the fixing of the colors which will conspire to produce the effect desired. A common marble carver might cut without any exercise of conception a second Apollo Belvidere from the model before him; but no artist ungifted and uncultured in design could copy in Guido's crucifixion the hues of cloud and tints of flesh, when darkness struggled with the light, which threw its uncertain gleam upon the radiant form of the sufferer and on the shifting mist around. In *invention*, too, the painter has a work beyond that of the sculptor. Thus in foreshortening, the painter does not like the sculptor directly execute the dimensions of those parts of his work which are to be viewed obliquely; he must represent them by a skilful gradation of colored shades on the retiring limb; a work tasking the highest powers of invention. In *composition* again, so few figures can enter into a work of sculpture, and so impossible is it even in bas-relief to introduce any appreciable back-ground in which retiring figures may be grouped, that the Greeks seem never to have used the word compo-

sition except in application to the grouping of the central and retiring figures and objects in a painting. Yet, again, *expression* is preeminently the province of the painter; for, if in apparent contradiction to the view of Cousin, Michel Angelo in a glow of enthusiasm addressed a matchless statue as if it ought to speak to him, from the day Apelles made the arm of Alexander seem even to a Cicero to stretch forth from the canvass, painting has been the art that has seemed able to impart actual life to its creations.

As the Greeks limited composition, one part of design, to painting, so the able masters and critics of art in modern times seem to have this art specially in view in treatises on Design. Thus Lionardo, in treating of design, says, "The first thing to be regarded is the relief; that the central figure from which the light is cut off by those on the sides have the deepest shades around it. The second is that the order and disposition of the figures be accommodated to the subject. The third is that the figures be alive to the occasion, with expressions suited to their attitudes." Again, the critic Jarves remarks: "True criticism follows the law of Intellectual Philosophy; if gross, it looks at *form* alone; if opposite in tendency it regards the spiritual. The *first* office of criticism is to penetrate to the *motive;* this including the inspiration, the intention, the compass and composition; and especially in ancient art we must always ask, 'why? wherefore?' before we criticize. The *second* office of criticism is to judge how the artist has carried out his intent in the material employed. More especially *choice* is to be regarded; that is, after the *motive*, skill in carrying out the design by selection of a theme. Composition comes next; or the skill of making the whole from its parts. The characteristics of skill in composition, as in design, so far as forms are concerned, include breadth, strength, freedom, grace, fertility, transparency, depth, gradation, fusion, lucidity, clearness, harmony and tone. . . . In itself color is neutral; but in composition, as in design, the critic demands at least purity, fitness and harmony; the more because that in color a corrupt taste is liable to control." The use of the word "shades" by Lionardo, and of "color" by Jarves, as well as the general tenor of their statement, indicates that it is the art of painting which naturally rises to the mind when the principles of Design in general, and especially of Composition as one of its branches, is considered.

CHAPTER III.

MATERIALS AND SPECIAL METHODS OF USING THEM IN COLORING; AND CONSEQUENT CLASSIFICATION OF AGES, STYLES AND SCHOOLS IN PAINTING.

The character of the objects to be represented and of the effects to be secured by painting leads to the consideration of general principles ruling the choice of colors. The classes of materials furnished to artists, from which to make selection in the execution of their work, has led to special methods of coloring; and, as these methods have been improved by experience and culture, different ages and schools in painting have arisen and succeeded each other. The field of the history of painting is as wide in space as the earth's face where men have dwelt, and as lasting in time as the roll of the recorded annals of human life; and every variety of character and grade of excellence is to be found among paintings of the same land and age. Classification, and study of the principles on which classification must rest, are essential to the student who would comprehend so vast a field, and rightly appreciate such varied execution. The leading points on which classification of ages and of schools turns, relate to pigments or coloring materials, vehicles or mixing agents, tablets or substances on which colors are laid, subjects or themes to be represented, objects or the purposes for which paintings are designed, and styles or the special manner of execution practised by different schools and by rival artists.

Sect. 1. Pigments; or Materials used as Colors.

The first pictures were executed either as mere drawings, without any color at all, or with color used without regard to its propriety as an adjunct to the drawing. As outlines, cut with a hard, sharp pencil into the material on which the picture was to be drawn, such as wax, stone or copper plate, were the germs of sculpture, so drawing executed with a soft pencil of adhesive texture, such as crayon, charcoal or chalk, which left a line of its own substance on the material, was the first stage of painting. These primitive pictures were called *skiagrams* by the Greeks, because they were drawn in shade; which were followed by *monochromatic* pictures, or those executed in one color with simple ochres or vegetable tints. Afterwards, though the

most eminent painters of the climactic age in Greece, as Apelles, are said to have used but four colors, a large number of different pigments were tested and either adopted or rejected as experience developed their merit.

The classification of pigments in the early eras of the history of art is made to depend on their color or external appearance when laid on; and hence the lists of blacks and whites, reds, yellows and blues made by Pliny as well as by modern writers on art. The nicer analysis of a cultured age classifies coloring materials according to their essential chemical elements, as vegetable and mineral. The method of classification according to hue may be traced back to very early times; and it has been so uniform that West has suggested that the idea originated from observation of the rainbow. The able Indian philosopher Kanada taught that there are seven distinct colors; among which he included black and white. A. R. Mengs, who died A. D. 1779, in his notes upon Winckelmann, remarked that the colors used by the Egyptian painters were six in number, white, black, blue, red, yellow and green; which he says they laid on "toujours pures et sans melange," always pure and without mixture. At a later period, and seeking a more elementary analysis, the able chemists, of Napoleon's expedition A. D. 1798, and later English chemists, have decided that though the pigments used by the Egyptian artists were chiefly ochres or earths, colored by metallic oxides, they were also partly metallic and vegetable. The same conclusion as to those employed by Assyrian artists has been reached by Layard and others. The study of the pigments used by the Greek painters as developed by Pliny and other able Greek and Roman writers, shows the recognition of the same fundamental principles as to colors; while too the same three sources whence colors are to be derived are recognized, the earthy, the metallic, and the vegetable.

The analyses of Modern Chemistry have enlarged the number of articles used as paints; it has led to a knowledge of the elements of which compounds are made; it has enabled the philosophic artist to effect new combinations, to form new theoretical conclusions as to the durability of different pigments, and to enlarge the list of varying shades, hues and tints; yet the same natural and artificial colors which by practice the ancients found to be the best are still retained, and are generally acknowledged to be superior. The extended lists of pigments now used and the exhaustive analysis of their elements found in modern treatises present the connection between ancient and modern art quite as intimate in the department of painting as

of sculpture and of architecture. The classification of hues extends farther, embracing the analysis of elementary and mixed colors, of primaries, secondaries, tertiaries, and semi-neutrals. The chemical analysis has led to subdivisions; the mineral being classified as metallic or earthy, and the vegetable as acid or alkaline. Some of these, mentioned in every period of the history of painting, are found in their natural state, or are obtained by decoction or combustion of animal and vegetable substances, or by the action of heat in producing mineral compounds. As examples of universally employed pigments these three classes are prominent; the English madder, the *rubia tinctoria* of the Romans, and the *eruthra* of the Greeks, extracted from a plant whose root yields a bright and always favorite *red;* ochre from the Greek *ochros*, pale, opposed by Aristotle in human complexions to *eruthra*, a term applied to earths of various dull colors, all produced by that common coloring ingredient of fertile soils the oxide of iron; and lake from the Indian word *lacca*, a designation of the combination by boiling of vegetable tinctures with earthy ingredients, particularly clays. Nearly every variety of these three classes of non-metallic pigments, as well as some of the more important metallic compounds, are found now in use among the Chinese, a people the modern counterpart of the ancient Egyptians, and whose authentic historic records run back to the same early period; while, too, these same classes of pigments, and that of different colors, may be traced directly back from modern times through the Middle Ages to Rome and Greece, and thence to Egypt and Assyria. As proof of their use among the Greeks and Romans, Linton in his treatise on "Ancient and Modern colors," after giving the complete list of metallic pigments now used, finds, that of forty-two mentioned by Pliny and other ancient writers thirty-one are now employed by painters.

The general results of the analyses made by chemists of Egyptian pigments under the direction of Sir Gardner Wilkinson, and of Assyrian under Dr. Layard, have been brought together by Linton. The analyzers of the Egyptian colors state the following: The blues "all appear to be oxides of copper." Of reds two were used; one brownish and the other brick-red; the brown being an oxide of iron with lime. The red, or scarlet, on the mummy cloths was madder, the coccus of Pliny; red ochres, or ferruginous earths, were used in the tombs. The yellows were ochres on grounds, and vegetable on cloths. The greens were blue glass mixed with ochres; also on the stucco at Thebes a vegetable yellow, probably the *henneh* so common

in Egypt, mixed with copper-blue. For blacks, calcined bones, lees of wine, asphaltum or burnt pitch, charcoal and soot were used. For whites, a very pure chalk, lime, and gypsum were employed. This modern analysis agrees with and illustrates the hints of ancient Greek and Roman writers. Thus Theophrastus records, "A certain king of Egypt first made artificially a liquid blue imitating the natural;" which *cyanos Egyptius*, as the Latins called it, is a silicate of copper, of which Vitruvius again says that it was "brought to Puteoli in Italy from Egypt." Chaptal, Botta and Layard, alike found the three primaries, red, yellow and blue, as well as the neutrals black and white used by ancient Assyrian painters; Layard also mentions green, purple, violet and brown. The blue he regarded as copper, and the green as composed of a yellow iron ochre mixed with copper-blue, like the Egyptian; while among the blacks he found iron ochre and calcined bones, and among the whites alabaster and gypsum, all of which are met in Egypt. The unbroken connection of history in pigments is strikingly illustrated in the "vermillion"[1] mentioned by the Hebrew writers; the Hebrew being directly traceable through allusions in translations of the Old Testament and such writers as Strabo, Dioscorides and Pliny, to the Chaldee *shashur* of India, the *miltos* of the Greek, and the *sinopis* of the Latin.

The study of the nature of pigments was in ancient as truly as in modern times an experimental science. Hippocrates and Aristotle among the earlier Greeks, followed Kanada the Indian philosopher; and Theophrastus, Vitruvius, Dioscorides, Galen, Plutarch and Pliny, among later Greek and Latin writers, devoted pages to the painter's art and to the analysis of pigments. During the early and middle ages after the Christian era, while philosophy lived in every department, though hid in the cloister, instead of making its visible mark on men and nations, minds of active and original cast turned to the entrancing charms of art, as some were devoted to scholastic dogmatism and others to metaphysical speculation. The allusions of Herodotus, Plato and Aristotle show that the investigation of the properties of drugs was pursued by men devoted to it for the united ends of art and of medical science. Hippocrates, the Greek physician, who wrote before Plato, about B. C. 420, remarks that "the writings of physicians, or physicists, had less regard to medicine than to arts of design." The word *pharmakon* was

[1] Jer. xxii. 14; Ezek. xxiii. 14.

used for pigment as well as medicine by Greek writers from Herodotus to Plutarch.[1]

Pliny in his Natural History has the fullest development extant of the nature of the pigments used by the ancients, and the history of their employ. He begins his Thirty-third Book on Metals, by stating that they have a dignified use as "pigments." In speaking of *monochromata*, or pictures in one color, he says, "The ancients painted monochromata in vermillion (cinnabari); also in Ephesian red lead (minio), which has been abandoned because of the great labor of its preparation. Moreover, since both of these were thought too vivid (acre) there was a transition to bright-red and dull-red ochres (rubricam et sinopidem)." It was evidently a flesh-color the Greeks were seeking for their paintings done in one color; and the dull color was found preferable to the bright. In his Thirty-fifth Book on Painting and Colors, Pliny divides pigments into *austeri et floridi*, grave and gay; and gives a long list of colors and of coloring materials; including, as already observed, a large number of pigments still found to be the best among metals and earths, animal and vegetable ingredients. To the enthusiastic student of art his minute descriptions of the location, nature and methods of preparing these pigments by the ancients is intensely interesting as well as eminently instructive.

In the ages after the introduction of Christianity, when painting in both the Eastern and Western Churches was so extensively employed for Church decorations, a most exhaustive study of ingredients furnishing pigments was made; and to this study more than to aught else, pursued chiefly by monks and others devoted to the interests of the Church, the world is indebted for the discoveries of Modern Chemistry. The celebrated Byzantine manuscript found among the monks at St. Athos, and the scattered allusions of early Italian writers on Painting, reveal secrets carefully guarded then by monastic orders and ecclesiastic artists. Thus Vasari mentions Raphael's delight that the Pope had appointed "an aged friar" to assist him in the decorations of St. Peter, because he expected to "learn some secrets of the art from so experienced an associate."

In the progress of modern painting the ambition to secure improved pigments has almost rivalled the ardor of men of the Middle Ages in search of the philosopher's stone. In this pursuit, as the work of

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[1] Herodot. I. 98; Plat. Repub. 420, c.; Arist. Eccl. 735; Hippoc. de Vet. Med. c. 36; Dion. Halic. de Comp. Verb. c. 21; Plutarch de Defect. Orac.

Eastlake shows, the thorough study of the writers on Greek painting has best pointed out the paths which have been thoroughly searched through, and those which invite farther scrutiny. The investigation of the pigments tested by such artists as Lionardo and Raphael, Van Eyck and Rubens is necessarily imperfect without previous study of the sources whence they drew their first principles.

Sect. 2. Vehicles and Varnishes; or Materials used for Spreading Colors and giving them Clearness, Brilliance and Durability.

Pigments are chiefly in a solid form; and they need to be converted into a semi-fluid condition in order to render them susceptible of being spread. So far as this alone is concerned, any solvent or liquid with which the pigment might combine, or in which it would float suspended in mixture, would meet the demand. Three subordinate ends, however, were found to be desirable even in the early stages of the history of painting; and as the art has been perfected the search for fit *vehicles*, or carriers of colors, was as earnest a study with artists as for worthy pigments. The first and essential quality in a vehicle is ease of flow and smoothness of spread, as opposed to daubing and pasting in laying on colors; a second and important characteristic is adhesiveness to the ground on which they are laid, and consistency in themselves, so that they shall not scale or crumble; while a third and desirable property is lucidness and transparency in the color when laid on, the vehicle neither covering so as to hide the color, nor leaving it unaffected by the polish of the liquid with its own dull metallic or earthy aspect, but giving its own sparkling lustre to the pigment which it allows to be seen through itself.

Water the natural and universal solvent, the fluid which the Creator has made his own vehicle for moulding and beautifying forms in the vegetable and animal kingdom, was naturally first selected in rude ages as an agent with which to mix paints. It is the simple liquid which the child and savage use, whether they employ vegetable coloring matters mixed to their hands, or the colored clays which must be moistened before being used; it was the only solvent used by ancient Egyptian and Grecian painters even when considerably advanced in art; it has remained from the days of the earliest Egyptian tombs the only vehicle proper for fresco painting; and to this day painting in water colors is an important branch of the finished art. Its use is so simple and natural that it requires little more than the mention, when used alone, as a vehicle.

The ancients had learned the qualities in water which make it even now to be preferred as a vehicle in painting delicate objects such as flowers. It dries rapidly, so that the artist can complete his or her work, laying on coat after coat of paint, without waiting for hours or days to let each be separately dried; and by its employ the perishing flower, whose fleeting beauty literally fades in an hour, may be completely copied ere the special hue of its prime and the fresh brilliance of its gloss is gone. Water again being only a vehicle, evaporating completely so as to leave none of its own substance, but only the pure pigment behind, has no tendency to change the hue of the pigment laid on with it. The ancients, however, learned that waters from the soil are always liable to be impregnated with mineral or salt ingredients; which may affect the hue of the pigment, though the water would not. Rain water, therefore, and in the advance of art filtered rain water or distilled spring or well water, have been sought to avoid any acid from the atmosphere or alkali from the soil whose chemical change might in time injure the color. The ancients, too, as well as the moderns, observed the ease with which water colors could be removed; a quality most undesirable to the artist who sought to preserve his name in a permanent perfected work, though very convenient when from any cause he wished to change his design or modify its execution. This was illustrated when Apelles used to place his completed painting in the window of his study in order to listen concealed to the criticisms of passers by, which might give him hints for their improvement. It was illustrated in the method employed by Buffulmacco, the Italian painter, so called from his fondness for buffoonery, when he provoked the horror of pious ecclesiastics by representing in his sacred themes St. Luke blowing the ink out of his pen, and the Virgin Mary nursing a bear's cub in place of the infant Jesus; these scandalous appendages being merely laid on his oil painting with water colors which a wet sponge would readily remove.

It was an advance in the admixture of colors when the method styled *tempera*, was introduced; some glutinous vegetable substance, or gelatinous animal matter, being added to the water to temper, or give proper consistency to the admixing fluid; as glass is softened and iron hardened by being tempered. In the later Latin the term *distemperata* came to be used for the classic *temperata*, supplanting the word *tempera*, which came into use in the Middle Ages. The English expression "to paint in distemper" implies the using of any other vehicle than water or oil; whether it be vegetable gluten or

animal glue. The viscid substance thus employed gave cohesion to admixtures; so that the colors laid on both adhered to the ground and cohered in their own layers. Sometimes a dry vegetable substance as gum, or animal matter as glue, was dissolved in water, sometimes natural watery vegetable juices as wine, vinegar and fig-juice, or watery animal liquors as the white of eggs, the serum of blood and cow's milk, were employed either with or without admixture of water. The Greek painters certainly at an early day used glutinous or gelatinous substances in mixing their paints; and there are indications that they learned it from Egyptian artists who before them had used tempering ingredients to give adhesiveness to their paints. Pliny constantly alludes to the use of animal and vegetable substances in the admixture of paints, mentioning a great variety of preparations of gums, resins, oils, and their mixtures with milk, honey, fig-juice, etc., employed by artists. That these same gums and glues were used by the Egyptian painters is inferred from the fact that Egyptian varieties of many of them are noted as especially valuable. In mediæval times, as Eastlake states, fig-juice was a favorite vehicle because it attained a consistency that made it durable. Vasari mentions that Cimabue adopted the art of painting in tempera from the Greeks, and was followed in its use by Giotto and his successors. In Germany and England, where fig-juice could not be obtained, and in Venice also, honey was employed; as appears from a manuscript of the Fifteenth Century found in the Public Library at Strasburg, Germany, in which a recipe is given for making a size of "the parings of parchments boiled in water," which when used for mixing pigments was to be "dissolved in warm water mixed with honey." In modern times among gums, Tragacanth, Arabic, Ammoniac and Isinglass, and among animal matters, albumen, serum and milk are used for tempera admixtures to give cohesion. To give adhesion in painting on ivory or glass, animal gall, borax, or a mild alkali are employed. Alcohol in admixture acts as an antiseptic; guarding against mildew and frost. In Italy wine has been used to mix paints, and in Germany beer.

Though gums and glues thus used in the mixing of paints gave to pigments coherence in themselves and adherence to grounds they did not furnish transparence to the colors floating in the vehicle, and a varnished gloss and protection to the surface of the picture. The great Author of all things, the Divine painter of the broad face of Nature, who had furnished the water and the gum, hinted to men His own supply for this lack also. Every plant had been made to secrete a

substance distinct from gum in both its chemical and physical properties, but as viscid and easily spread; dissolved by heat instead of water, and less transparent but firmer far; coating with extreme tenuity the upper surface of leaves and the petals of flowers, giving them a smooth polish to prevent the rain from adhering to and penetrating into their surface, and giving a gloss which added greatly to their beauty. This material, stored more largely on petals and stamen heads, had been made to adhere to the limbs of bees as they pressed their heads and bodies to the honey-cells at the base of the flower; so that with each load of sweets to be stored these tiny architects carried a supply of material with which to build up the requisite cells. It was natural that men in appropriating the honey should avail themselves also of the wax; and that artists should use it to give protection from the damp and a finished gloss to their colors.

The use of wax, *keros* in Greek, *cera* in Latin, as a vehicle for mixing pigments, originated, as Pliny mentions, at a very early day; even Polygnotus in the days of Phidias employing it. The suggestion of the method seems to have originated with the painters of the gaudy prows of vessels; who observed how the sun's heat caused the wax used in calking ships to flow over the painted surface, and to give a firm and glossy surface. Three methods, in the progress of the art, arose; which took name from the mode of spreading the pigment, mixed as it was with wax. In the first, the pigment was plastered upon the flat ground with a spreading scraper called *rabdion;* in the second it was laid in engraved lines cut into the ground, in the manner afterwards called *niello* in Italy, and impressed with an iron graver called *kestron;* and in the third it was laid on, as with other vehicles, by the brush called *penicillum.* When laid on, by either of these methods, a heated iron was held over the surface to burn in the pigment; this finishing process giving the name *encaustic,* from the Greek *enkaio,* to this style of painting. Its discovery was to the Greeks what oil-painting was to moderns; Lycippus, the predecessor of Apelles, writing upon his wax-paintings instead of the *epoiēse,* or *fecit,* of ordinary artists, the word *enekause,* burnt it. The descriptions given by Pliny and other ancient writers of the methods of preparing and laying on wax-mixed pigments are minute and interesting to the student of art. The advantages of encaustic painting were, the distinctness of hue caused by the floating and consequent glistening of the particles of pigment in the dissolved wax; and the protection of the color from the action of moisture and from friction in cleaning the surface. For ages this art was a

favorite; Horace and other critics extolling the masters in it; Tertullian and other Christian writers commending it, and Chrysostom the great preacher practising it as an auxiliary accomplishment; the Byzantine painters continuing it to this day, and the Venetians only giving it up for a superior invention.

The chief disadvantages of wax as a vehicle and varnish were its extreme gloss and consequent excess of reflection, which prevented the painting being seen to advantage except in one light; its stiffness and consequent exposure to crack from bending of the ground; and especially the want of an easy flow, which might allow the particles of different pigments so to intermix as to give gradation of hues. Another vehicle was therefore eagerly and perseveringly sought by able artists. The discovery by Van Eyck, the Dutch painter, A. D. 1410, of the method of using oil to meet this want is the commencement of the last great era in the history of vehicles used by painters. Eastlake has devoted years of study to the tracing of the history of this art. The ancient Greeks and Romans, and even the Egyptians, as Pliny's record shows, were acquainted with most of the essential and vegetable oils now known, olive oil and linseed being of the number, and from very ancient times they were used to a certain extent in the admixture of pigments; as early as the days of Charlemagne linseed was employed as a drying oil; but no practical method of making oil a vehicle for pigments in the higher class of art was known, chiefly from the fact that oil alone dried so slowly. Cimabue and other leaders in the revival of the art of painting in Italy used *tempera;* which, though fluid, did not so float pigments as to permit a thorough intermixture of different colors. Vasari, the art-historian of the era thus records the discovery of John Van Eyck. "Giovanni of Bruges, pursuing the art in Flanders, began to try experiments with colors; and being fond of alchymy, to prepare various oils for the composition of varnishes and other purposes. He at length found that linseed oil and walnut oil, among many which he had tested, were more drying than any others. These, therefore, boiled with other mixtures of his, furnished him the varnish which he and all painters of the world had long desired. Continuing his experiments he observed that the mixture of colors with these kinds of oil gave them a very firm consistence, which when dry was proof against water; and moreover that the vehicle lit up the colors so powerfully that it gave them a gloss of itself without varnish; and that which appeared to him still more admirable that it allowed the blending of the colors infinitely better than tempera." Van Eyck's

secret, afterwards made known to Antonello an Italian painter, spread to Italy and thence to all Europe. Subsequent experimenters and masters, as Lionardo, perfected the method of preparing and using oil; introducing gums, turpentine, alcohol and other ingredients to hasten its drying.

The last requisite in painting was a varnish whose smooth polish should at once protect and beautify the colors employed. The Egyptians in their sculpture manifestly understood the importance of a high polish in preserving and adorning their works; for never did coarse granite have its beauty so brought out and its lustre so preserved as in the finished obelisks of Thebes. The Grecian statuaries not only gave to ivory and marble the most exquisite polish, but Praxiteles even added a varnish to increase the perfection of the finish given to the fine texture of Pentelican and Parian marble. It was natural that both Egyptian and Grecian painters should gather a hint from the sculptor in their art. The Egyptian sarcophagi made of cotton prepared with lime-cement and richly colored, show to this day the varnish laid upon them. The study of Praxiteles and afterwards of Apelles, in search of a varnish at once firm and transparent is the theme of Pliny's special comment; his word *circumlitio* seeming to imply that a peculiar rounding out of the figure was produced by the added varnish in sculpture, and a projection of the figure from the canvas in painting. The ancients used mastic dissolved in oil; in place of turpentine, employed in later times. The modern use of Indian lac, however, shows, that, in the main ingredients of varnish, little progress has been made.

Sect. 3. Grounds; or Surfaces on which Paintings are executed.

In rude tribes man's fondness for gay colors has shown itself in the hues of his dress and scanty equipage. The American Indian daubed bright colors on the buffalo robe that formed his cloak, on the buck-skin which he wrought into his mocassins, and even upon the parts of his person most conspicuous, as his face, arms and breast; while his carved tomahawk, war-club and pipe were all the more admired if the wood was of some pure clear color. The Ethiopians of Central and Southern Africa have their beads and knife-handles, their baskets and other trinkets either adorned with some rich color artificially laid on, or they seek a material which in itself is of a bright color. As articles of personal adornments were the first to be decorated with colors, so the grounds, or material, on which the

painter first executed his finer works were the same in substance a. their ornaments.

When painting came to be a cultured art there were two fields for its exercise; first, articles attached to the person as dress and other ornaments; and second, large objects connected with abodes and equipage, house-walls, ship's-prows, furniture and wall-tablets in private and public edifices, as shrines of deities. As the art became perfected, and the best materials were sought for finished works, the painter's productions resolved themselves substantially into three classes; miniature, wall and easel paintings. Ivory became the favorite material for the former; a stucco of lime for the second; and wood and afterwards linen for the third.

Miniatures, a name derived from the Latin word *minium*, red lead, with which pigment as the best flesh color small portraits were first executed, seem from Pliny's mention to have been early worn like engraved gems, as finger ornaments. Their outline scratched upon ivory in delicate lines with a sharp pencil, was traced afterwards in *carmine*, or crimson. In the middle and later ages, parchment and even paper were made grounds for miniature paintings in water or tempera; especially in the work of limning or the adorning of manuscripts; and vellum, a finely whitened parchment, was esteemed by early painters in oil. The term *vignettes* was given to small isolated heads wrought into the borders of manuscript pages; the name being derived from the delicate vine often interwoven into the border, from which, as flowers, cherub heads were made to depend.

Wall-painting on plaster was of very early origin. As we have observed, the walls of Egyptian tombs and of Assyrian palaces were covered with a cement, which, while it received the nice touches of the chisel, was also the ground for rich paintings. The principal ingredient of this cement, as the ancient Hebrew, Chaldee and Greek words show, was lime. Pliny minutely describes the method of preparing stuccoed walls for painting; the lime, chalk, or gypsum being beaten with a mortar and mixed until it will not cohere. In marshy ground a first coat of brick-dust was laid on to arrest the communication of dampness. The mortar was mixed with gum-water, sometimes with milk. The ancient wall-painting seems to have been *in secco*, or on dry plaster; and Pliny carefully designates the pigments whose nature was not affected by the lime of the ground. The unburied houses of Pompeii, whose walls are covered with paintings on plaster, show the extent to which among the Romans this art was carried.

Fresco painting proper seems to be of modern origin. The name implies that the pigments are laid on when the mortar is fresh; this condition of the ground allowing the colors to sink in to a considerable depth, so that the wear of time and of frequent cleaning does not injure the effect. This method requires that the painter's work be executed in sections; no more space being prepared than the artist can finish at a sitting, or in a day's time. It is difficult to prevent the junctures of the work of succeeding days from showing; and it is a study with the artist to have the lines of each day's work fall in the shades, where the darker colors hide them. Some critics have supposed that on the painted walls of ancient Pompeii they could detect these junctures; and hence have inferred that fresco proper was known to the ancients. Others have supposed that only what is called in modern Italian *secco-fresco*, or the wetting of a dry wall already prepared, was practised by the Roman painters.

The modern progress and perfection of fresco painting has been a subject of earnest study by art-critics. Cimabue introduced wall-painting in the early revival of the art; using evidently the dry wall and painting in tempera. Giotto drew his outline on a first coat, and to increase its depth laid on an upper stratum called *intonacco;* while Orvieto, a successor of Giotto, A. D. 1390, seems to have been the first to use *fresco* proper; the character of the distinct work of these two artists on the walls of the Campo Santo at Pisa being specially marked in its decay. For two centuries fresco was the favorite method with the ablest artists; because of the freedom and scope, as compared with oil and easel painting which it allowed. Lionardo's chief works were in fresco; and M. Angelo admired it as "large-hearted."

The two materials used for grounds in painting easel pieces, to be suspended as ornaments and in galleries, are *wood* and *canvas.* The use of these two kinds of material seems to have been coeval with the origin of painting as an art; while the mode of their preparation as grounds for painting was in ancient Egypt much the same as in later Grecian, Byzantine and Italian art. The qualities requisite in the material for a tablet are "durability, infrangibility and inflexibility." Metallic tablets expand too much by heat; parchment and cloth bend easily; and both thus cause the painting on them to crack. Wood, or canvas stretched upon a frame, best meet these conditions. A wonderful history of ingenuity is opened up to view in the devices of ancient and modern painters to preserve the

tablets on which they executed their master-pieces from the decay caused by heat and damp, and by the tooth of time and of worms.

The ancient Egyptians formed their ordinary coffins, on whose exterior some of their richest paintings were executed, of the two kinds of material referred to. The more massive and costly, aside from the granite sarcophagi used only for the bodies of kings, were of wood; whose lid, carved into a statue in relief, was painted with rich colors thickly laid. A cheaper coffin was made of layers of linen cloth, united by intervening coats of lime-cement, to the thickness of about one-fourth of an inch. This mere shell of linen, thin as it was, hardened to the stiffness and strength of a board of much greater thickness; showing the admirable consistency of the cement itself, and the skill of the Egyptians in giving both "inflexibility and infrangibility" to what was to be at once the enduring depository of the sacred dead, and the ground of their equally enduring painting. The exterior was coated with a fine white cement, which Eastlake thinks was composed of chalk ground in size; whose surface was rubbed to a fine polish when paintings of great variety and elegance were to be executed upon it. Among the Greeks Pliny mentions the use of both wood and linen for tablets. Protogenes, and the ablest of Grecian painters, were employed by their countrymen, proud of their navy, in painting the wooden prows of vessels; and this employ evidently suggested the method of their finer works as to their grounds, as well as to their pigments. So common indeed was wood as the material on which easel paintings were executed, that the word *tabula*, according to Pliny, came to be ordinarily employed as the synonym for easel pictures; the word *machina* being the name for the easel itself. That canvas, or linen cloth, was used by the Greek painters, is equally clear from the allusions of Pliny. Thus in his account of the contest of Parrhasius with Zeuxis he speaks of the *linteum pictum* in a manner which indicates not simply that Parrhasius painted a linen curtain, but that the painting was on linen. In the same connection he mentions that "Nero had ordered a colossal painting of himself 120 feet high to be executed *in linteo*," on canvas.

Sect. 4. Subjects of Painting; the Objects in Nature and Themes in Thought or History susceptible of being Represented by the Painter.

The mind of man derives instruction and pleasure from things perceived by the senses, from ideas conceived in the understanding

and images framed by the imagination, and from remembrances recalled and reproduced by memory. In the youth of an individual or of a nation things are the objects of thought and effort; in the maturity of a man or a people ideas are the study and the employ of human reason; while old age, be it that of an individual or of society, lives in the memories of the past. From these three fields of human thought, emotion and action the artist must select his subjects; and in these three departments the spirit of art in every age and nation, has shown its rise and progress.

Things are the first subjects of the young artist's attempt with the pencil, chisel, or brush. The common child draws houses or other simple objects; while genius, such as that of Giotto or West, may attempt to picture a sheep, or even to sketch a babe in the cradle. The rude savage and the half-civilized Asiatic paint single objects; first, as the American Indian, coloring the objects themselves; then as the Egyptians, laying colors on pencil drawings made to represent simple objects. One of the higher orders of this class of subjects for painting was the "limning" of the Middle Ages; the drawing and coloring of ornamented letters in the "missals," or books containing the order of service in the Church; a style of painting, which, though fragmentary and embracing properly single figures only, yet called forth and employed the genius of an age which under more favorable auspices would have produced great masters in art.

Ideas next suggest themes for artists. Causes producing effects are noted; and the series of changes in things and men which indicate connection and succession are studied. The very first impression of thinking man seems to lead to the idea of a Deity, the author and sustainer of all things; and at the same time the conviction of duty to adore that being, and the effort through some image wrought by men of superior genius to approach him seems to arise. The first idea, attempted by art, has been carved and painted images of Deity; at first rude in form and coarse in color, like the Mexican and Feejee idols; then richly colored and gilt like the Budh of China and Hindostan; then artistic in form though without expression, as the colossal statues of deified men in ancient Egypt; and last in this stage of art pictured representations of deities on walls or tablets. With advancing intelligence artists have formed definite ideas of distinct attributes belonging to superior beings; until a Jove and Venus from the chisel of Phidias and Praxiteles seem to move and speak from their fixed pedestals, and the Jupiter Tonans to be hurling his thunder-bolt from the canvas of Apelles. The higher orders

of coloring, beginning with a loftier yet common idea, have shown different tendencies in human thought, and have led to new varieties of subjects for the brush. From pictures of gods men passed to pictures of men, ennobled by various classes of qualities, and illustrious in different spheres. Among people of limited range of thought and of enterprise, dwelling unambitious in their own native limits like the Egyptians and Chinese, the artist's field of subjects has been comparatively narrow. Among the Greeks, a people roving away from home for commerce and conquest ever since the days of the Argonauts and of old Troy, this range widened; heroes in war next after gods, being themes for their painters; then athletes in active conflict, and philosophers and statesmen in their quiet walks; and finally forms of female beauty, born in their own cities and brought home as captives by their military chieftains. In all these cases an ideal of character, conceived by the artist beyond the perfection of his model, was the painter's theme; even portraits, as of Alexander, presenting only the general lineaments of the original; while in spirit, in accessories, in tone, a thought above his subject animated the painter. With the impulse given to sentiment by Christian truth and its spiritual renovation, as it spread through the Roman world to the people of every clime and of three continents, all the influences of genius in art were intensified in spirit and widened in their field. Beginning with the simple symbols of the early spiritual faith, taking on then for ages the gorgeous ornament of a religion of persons and things held specially sacred, and finally in later ages stretching its sphere to the vast range of ideas and things called forth by the universal civilization resulting from spiritual Christianity, the area of its themes, yet unexplored, forbids all attempts at enumeration or exhaustive classification. The last stage developed in this line of progress has been landscape painting; in which the ideas of the highest science as to mathematical and optical effects are made real; while also a delicacy of conception and execution in making cloud to float, and water to reflect, to ripple and to foam has been attained, which seems almost magical, and above human power; a class of subjects never attempted by the Greeks, into which the finest masters of the climactic period of art in modern Italy did not penetrate, and which has been fully ventured upon only by later German, French, English and American painters.

Memories of the past have furnished a third class of themes for painters; prompted by whose suggestions cabinets and picture galleries have been filled with their choicest gems. First in order

in this class of demands is that for family portraits; likenesses of departed ones which keep them, though dead, still in life. When such portraitures present the features of an individual in his quiet life, the artist's work but perpetuates a simple memory. When, however, the painter seeks in portraiture to embody an elevated sentiment, and to this end strives to catch and fix in expression some striking characteristic of mind, the superior range of subjects called "historic," is reached by the artist; the highest to which the Grecian artist aspired, and above which only one class of themes has in later times risen in exaltation. Under the influence of Christian revelation the inimitable moral beauty pictured in the lives of Old Testament "friends of God," and the unapproachable spiritual grandeur that was manifest in almost every incident in the life of Christ and in many events in the history of his apostles, has furnished a fertility and fascination in the subjects touched by the genius of modern art beyond the conceptions of the ancients. The variety of those themes called "Scriptural Illustrations," and the unlimited improvement in the methods of presenting them attained by artists during the progress of eighteen centuries, is the most remarkable, as it is the all-pervading characteristic of modern painting. The height of human conception in exalted forms was perhaps reached when Lionardo, for weeks, now roamed the crowded streets of Milan, and now sat for hours absorbed in efforts of imagination; till he almost despaired of ever realizing his ideal of the countenance of Jesus. When to the perfection of form attained in sacred themes by the Italian masters shall be added, what has never yet been fully attempted, truth to landscape views in the Holy Land, a new if not the climactic subject for the painter will have been reached. When the uniting of the most sacred memories with the strictest historic truth shall be attained, when to the form and features of Jesus as given by Guido in his Crucifixion, by Raphael in his Transfiguration, and by Lionardo in his Last Supper, shall be added the perfect truth in Oriental landscape achieved by the pencil of Bartlett in sketching the scenery of Palestine, and this shall be touched with the shade, the tint, the aerial enchantment of a Claude, a Turner, or a Church, the master painter of the ages will have appeared.

Sect. 5. The Uses of Painting; the Ends sought by Painters, and the Classes of Works designed for Different Effects.

The word "use" implies an *end* sought in an object made; and an end to be attained implies a want in human nature which gives

the impulse to its attainment. As we have seen human wants are individual or private, growing out of man's self-interests; social or public, relating to his fellows of the same race; and religious, or devotional, based on his relation to his Creator and the spiritual world. All these wants exist in man as man, displaying themselves in the early stages of the history both of individuals and of nations; they call for works of art when men are yet rude in their conceptions and coarse in their skill at execution; and they grow and ripen in their demands as a people are refined by culture. In this progress, modifying as it does the uses of painting, there are at least three stages to be observed.

The earliest demand for works of art, sought as ornaments for the person, grows out of course of an individual want; and works of art in sculpture or painting must in this stage be of limited extent and perfection. The child has less interest in the fine old portraits that adorn the walls of the family mansion, or in the historic paintings filling panels in a town hall or State capitol, than he has in the gaudy colors of the picture book which he receives as his birth-day gift. So in the lowest stage of savage life, before barbarous tribes have learned to have a common standard or painted banner as the first emblem of nationality, this individual craving for rich coloring displays itself in equipments for war; the elaborateness of implements and dress varying with chieftain rank. Even the religion of men, in this lowest type of humanity, seems to be an individual interest; showing itself unsatisfied with the idea of a spiritual being everywhere present, or of a common and public deity far off in some distant temple; and seeking an embodiment of a supernatural power in some shrine in the family dwelling, or some image worn about the person. This tendency of the religious nature always demands art, and especially skill in coloring; forming the "fetich" of the South African, stained with berry juices; the beetles made of potter's clay, colored with ochre, and hung upon necklaces worn on the breasts of the living and the dead among the ancient Egyptians; as also in the carved and painted symbols called "charms," now sought even in Christian lands where culture is yet in its incipient stages.

The second stage in the progress of art, so far as its uses are concerned, is reached when the mind passes beyond the individual, the family and the tribe, and takes in the broader relation of a State or nation; and in nothing is the era of this transition more marked than in the demand then manifest for new works of sculpture, and especially of painting. At this period in the history of a people,

as all history confirms, when separate tribes consolidate into a nation, and architecture becomes an art because public buildings are needed, paintings on a scale of magnitude and in a style of merit adequate to such structures, are first called for. Thus when the Egyptians after two centuries of tribal life reared the Pyramids, when the Hebrews consolidated under a king and sought in Jerusalem as a fortified capital a castle, a palace and a temple, when the Greeks first had civil governments which gave them nationality, when the tribe which founded the city of Romulus aspired to be a nation, when the Arabs who before had no city or public building became consolidated under Muhammed and his successor Omar, in fine in every land, and among every people, the era of civil union demanding grand structures in architecture has been the origin of a new type of painting, and of new uses for this climactic art.

The character of coloring which the architectural age of a nation calls for is specially wall paintings; and these are mainly of two classes; columnar decorations for the prominent parts of the exterior; and fresco, including panel and ceiling paintings, or wall painting proper, for the depressions and recesses of the interior. Thus in ancient Egypt at the marked period when architecture became truly an art, the columns of temples and the walls of tombs began to be covered with the rarest variety of painted objects and scenes. So the Athenians, at the era when Pericles was rebuilding in the acme of architectural splendor, the temples and other public edifices of their city, sent as far as the Isle of Rhodes for painters competent to execute the wall paintings which should suitably adorn the entrance to the incomparable Parthenon; while, too, at about the same era the Romans were employing painters from Greece to fresco the walls of their newly erected Capitol at Rome. The whole history of Church architecture is yet more to the same point; commencing with coarse columnar decorations and rudely carved and dull-colored images of Christ, of the Madonna and of other Saints in the Western Churches, and of stiffly drawn but gorgeously colored pictures of the same in the Eastern Church; maturing in the constantly improving frescoes whose perfection culminated under Raphael, Lionardo and Correggio, till the walls of Churches seemed to re-enact the scenes of Christian history, and the ceilings to open Heaven with its etherial inhabitants; and finally showing its ripest fruits when oil-painting came to rival fresco, and to fill the panels of Churches and other public edifices with broad fields of canvas devoted to historic and sacred themes. The successive erection of such Churches as St. Peter's at Rome, of

St. Paul's at London, and of the Madelaine in Paris, and of such civic edifices as the palace of Versailles, the new Parliament Houses of London, or the U. S. Capitol at Washington, illustrate the fact, that, as an accessory of architectural works, painting aspires to a second stage of advancement.

There is yet another stage of still higher advance in the art of painting to which every nation of true culture has attained; the age of "tablet" paintings as denominated by the ancients, the "easel" or "cabinet" pieces of the moderns. When the walls of the main public edifices are all covered with frescoes, and temple and capitol niches and panels are filled with wall paintings proper, the spirit of art creation has not exhausted itself, nor is the demand of a cultured people for its superior works sated. On the other hand, genius is at this era just aroused, called out, trained and nerved for yet higher designs and efforts; and as science, philosophy and literature in every department are still advancing art finds constantly increased subjects calling for its embodiment, and a taste for yet more perfect execution craving an improved order of painting. The age of easel painting, of pictures executed on large yet movable tablets, has arrived. Works of every variety, fruit pieces, animal sketches, portraits, historical pieces, Scripture incidents, landscape, all to be executed on principles broader and ideas maturer than those of the former era, are demanded. Wide halls and long galleries reared by private fortunes or private munificence, invite the collection of works of art specially to instruct and refine the already cultured public taste. Laboring in this highest department and for this end Zeuxis and Parrhasius, Apelles and Protogones stretched their canvas and smoothed their wooden tablets, fixed them as they toiled on movable machines, and wrought pictures which not only gave the last glory to Grecian art, but which borne to Rome conquered "rude Latium" and subdued it to "captured Greece." So now this climactic era of the painter's skill rules in the collections of the Vatican at Rome, of the Pitti Palace at Florence, of the Louvre at Paris, and of the National Gallery at London; while the germs gathered at the Atheneum of Boston and the Dusseldorf Gallery of New York, as also such private galleries as those of Harrison at Philadelphia, and Corcoran at Washington, are indications that the country whose people call for such collections has entered at least on the verge of the highest stage of advance in the ends sought by the art of painting.

Sect. 6. Styles of Painting; the Methods of Coloring characterizing different Ages and Nations, and Originating different Schools among Painters.

There is a radical difference in the mental cast of nations which leads to most different styles in art, especially in coloring. The Asiatic, as represented by the ancient Egyptian and Assyrian and by the modern Chinese and Arabians, never has attained to the higher principles of the art of painting, such as perspective in drawing and chiaroscuro in shading and coloring. On the other hand, the European, as represented by the ancient Greek and the modern Italian, has seemed instinctively and from his first essays in art to have recognized these higher principles of excellence, to have studied to attain them, and after long practice, sometimes of generations, to have reached his aspiration for perfection in execution. Thus the *Ages* of greater and of less success in design and execution have been marked out. Even in Egyptian painting eras of improvement are visible; and in Greece no comparison could be made between the early essays of the hero painters and the finished ideals of Apelles in the last stage of Grecian advance in this art. So in modern times there have been ages in the history of Christian art most marked; for, while in the Eastern or Greek Church the old Byzantine, of Asiatic cast, has never broken free from the trammels of ecclesiastical standards, in the Western Church no transformation could be greater than that which passed upon Christian painting from the Twelfth to the Fifteenth Century, or from the age before Cimabue to that of Raphael. Yet again, in the last stages of the art, *Schools* of painting have arisen; determined by the mental cast and consequent taste of the people of different sections and of the artists of different sects in the same country and at the same age. The divisions in the classification of the history of painting arising from different nationalities, and also in different ages, is so manifest, that it needs only the mention before proceeding to that classification. The division of painters in the perfected ages of their art into different schools requires more particular notice.

The causes of the differences to be marked in the style of coloring characterizing different nations and ages may be found in the considerations of the previous sections of this Book; while the grounds of the separation of artists into schools is to be sought in a more radical principle of mental philosophy. Progress in painting has depended in part on the number and kind of pigments used; for

Pliny carefully marks the distinction between the employ of one color by the monochromatic painters and the use of four or more in advance of the art; and there is also a necessary distinction between the painting of savages who used berry-juices as coloring material, the Egyptians who used chiefly ochres, and the Greeks who used mineral pigments. Again the kind of vehicles employed has had its great influence in developing a new power in coloring; for the water colors of crayon and ochre sketching, the clear and open lines of fresco, and the deep round moulding of oil painting, are in their best state, so distinct, as to separate into widely different classes the practitioners who followed one or the other class of painting. These causes, however, have less influence than might at first be supposed to make an artist, or to divide schools. Thus Pliny is careful to state that Apelles even, and other of the greatest Greek painters, used "only four colors;" out of whose skilful intermixtures, of course, they produced all their effects; while the Egyptians used at least six distinct colors. Again, both Raphael and Michel Angelo, as well as Lionardo da Vinci, with all their great skill in oil painting yet loved the free scope, the quick execution and the striking effects of fresco. The fact that schools of painting have not arisen until the art has reached its last stage of advancement, points indisputably to other causes for the origin of this separation.

In the field of Asiatic painting there has been no division of schools; the mere wall painting of Egypt giving no occasion for such discrimination. The earliest known division in Greece, the Hellenic or Greek proper, and the Asiatic or provincial, was made after painting had come to be recognized as a sister art with perfected sculpture and architecture; and it grew out of the fact that the bold freedom in conception, and the study of nature in execution, peculiar to the Greek, came in this art into marked contrast with the stereotyped and trammeled spirit of the Asiatic; which forbade independence in the choice and treatment of a theme, and the modifying of methods of coloring which experience suggested to the artist. The second division of Greek schools, which distinguished the Athenian from the Sicyonic, arose from a different cast of mind in the people of the two sections of Greece; the spirit of Athens, the centre of commercial life and literary refinement, whose people lived under a democratic constitution which made every man in aspiration and in self-esteem a prince, causing the artists of this city to be the exponents of freedom and progress in art, while the people of Sicyon, in a secluded part of Greece and under a monarchy, became sectional

and wedded to old ideas. This distinction in cast of mind among the people of Greece, as in other lands since that early day, had a double tendency, first to create and then constantly to widen the breach between the two schools; first because the taste of the people led them to patronize only their own preferred style in art; second, because this patronage and popular favor drew from every part of Greece proper, and even from the isles and more distant provinces, artists whose own taste and cast of mind corresponded with that of the two several sections.

In the later periods of the ancient history of the art of painting, in the Augustan age of Rome, three distinct schools again arose, almost precisely akin to the three Grecian schools just mentioned; namely, the Byzantine, the Grecian and the Etruscan. The Byzantine, having its centre at Byzantium, afterwards Constantinople, and its field in the Eastern or Asiatic half of the Roman Empire, retained the stiffness in form and gorgeousness in color belonging to the old Asiatic school. The Greek proper, whose people now under Roman sway lived amid the scenes of former renown in their classic native land, aspired after the grace amid the departed glory of their days of political independence; and, inspired by the philosophy of Plato, its artists sought to be masters in the painting of ideal and spiritualized subjects. The Etruscan, whose pupils of Grecian descent and most truly possessed by the spirit of early Grecian art lived now under the courtly shadow of Rome, the Imperial City, became the representative of the natural school; instinct with the truth in form and color, in life and expression, which had marked the early Greek artists, both in sculpture and painting.

In modern times wider and more numerous divisions of schools are to be met and marked; since painting has become an advanced art among so many different nations, all of the same European stock. Commencing with Italy where art was first revived, we shall find numerous divisions and sub-divisions of schools; as the Florentine, the first to return to nature as a model; and, springing from it, the Venetian devoted to color, the Roman to form, the Lombard to expression, with several sub-divisions to be noticed in their place: then the Neapolitan Eclectic, borrowing from all the previously mentioned schools, but stopping short as eclecticism usually does with no special excellence in any line; the Bolognese Eclectic, of the same cast with the Neapolitan, but of later date; and the Spanish of the same general character, but more sombre in tone. All these leading schools, with minor sub-divisions, devoted themselves almost exclu-

sively to Christian themes; the Florentine going to that extreme of the natural which led the great masters to take living men and women as models for apostles and saints, and even for Mary and Jesus; the Paduan, a sub-division of the Florentine, clinging to classic forms in place of traditional or living personages; the Sienese, or old Roman, keeping the ecclesiastic traditions both as to form and color; while kindred differences caused other sub-divisions.

Passing to Northern Europe, a class of schools quite distinct from those of Southern Europe is met. The Flemish, springing to life on the flat rich alluvial soil of Holland, under a sky murky yet healthful with sea fogs, and dwelling among a people hearty and cheerful almost to levity, produced a race of painters who knew nothing of the bright sky or the solemn themes of Italy; but who in a union quite as much in contrast pictured cheerful home and sportive pot-house scenes under a dingy and dark sky; in the one case as in the other the contending influence of climate and cast of mind, of national and traditional associations, acting both as conspiring and counteracting causes. The German schools on the other hand, blended Dutch cheerfulness with Italian brightness; and added conceptions called forth by the literary spirit so general among this race of leaders in scholastic learning. In France and its schools, again, under a bright sky and among a people of fickle taste and of mercurial temperament, genius is seen ever on the wing; taking a start with Giotto the early Italian leader, again from Lionardo the master in theory and practice; yet never reaching, except in isolated cases, that measure of excellence which must always result from native energy guided by a steady fixedness of aim for generations, and sustained by the individual devotion and perseverance of a life-time. In England, yet again, the influence of a cosmopolitan life, with the old Roman yearning after a broad domain, has bred artists pre-eminently persevering, steady and conservative, yet open to advance and improvement; like the Romans more ready to accumulate by power and fortune than to create by patient native toil; so that instead of being mother of a race devoted to art, the mistress of the seas has had but adopted and foster children, with here and there a native master whose works the world will not willingly let die. Finally in America among a people made up of all nationalities, where artists of every country in Europe are newly mingling with those of native genius, as might be anticipated, no decided national style, unless it be in distant mountain scenery, has yet been established.

The chapters which follow will more fully develope the outline of history above suggested; whose present consideration may be closed with the general mention that "methods in coloring" will be found constantly associated with the history of the progress of the art. Aristotle, writing in the day of Apelles and Protogenes, after speaking of the proportions in which pure colors must be intermixed in order to produce other pure colors, says of this proportionate admixture, "This then is one of the methods by which special colors are produced. But another method is to make colors appear through each other; after the manner which painters employ, when they place a second color over one more vivid; as when, for example, they would make an object apparent in water or in a dense atmosphere; as too, in nature, the sun in itself appears to be white, but through a dense atmosphere or through smoke seems to be red." We have here a testimony not found in the fragmentary paintings of the ancient Greeks now preserved, that methods of producing the higher aerial effects in coloring specially studied by modern artists, were known to the ancients. A kindred illustration of the influence of newly invented methods in giving a new character to painting is seen in facts brought to view by Eastlake, Field, and others in the rise of the great modern schools. At the introduction of oil painting from Holland, where it originated, into Venice and Florence, the darker colors were at first laid on, as water colors had been, upon white grounds; through which darker colors, though their body was far deeper when mixed with oil than when water was the vehicle, by means of the transparency of oil which offset its depth, the white ground showed itself giving lightness to the overlying dark colors. The Venetians, however, seem to have returned to the ideas which they had learned from the Greeks. They commenced with a dark ground; they laid their dark colors, first, upon this ground, and then spread their light colors, made yet more transparent by a varnish mixed with the oil vehicle, over the dark and opaque body beneath; thus producing that effect, difficult of attainment in a night scene, the introduction of faint fire and torch lights, which throw a clear and radiant effulgence on the surface of the dense dark air, though they do not penetrate its depths. The minute and extended consideration of the several modern schools will suggest frequent reference to kindred effects produced by the efforts of men of genius, with different casts of mind, struggling to realize in execution the special classes of conceptions characterizing their differing schools.

CHAPTER IV.

ASIATIC PAINTING; RUDIMENTARY COLORING DEVOID OF TRUE ART IN FORM AND SHADING.

In art the Asiatic mind has been quick of early apprehension, and rapid in development up to a certain fixed stage; but into the higher fields of progress it has never penetrated. The people of Western Asia, as we have seen in drawing, sculpture and architecture, had the germ of science, literature, philosophy and religious truth retained, and they were the chosen depositaries of spiritual revelation for ages; and thus they were prepared to be school-masters of pupils to outstrip them in every department of human pursuit. In painting, the highest of the arts, we should expect to see this characteristic most marked in its operation; because as color is added to form their deficiency in both becomes more apparent.

As teachers of their own race in the art of painting, the Asiatics have left successors true to the traditions of their fathers; the Chinese now having painters of the old Egyptian type. As the masters and instructors of the races peopling Africa, quick and energetic in grasping rudimentary conceptions, docile as learners, and untiring in application, Asiatic lords have advanced this art among rude tribes, as they did in ancient Egypt, just so far and so long as their rule has extended; while the rudest barbarism prevails where their influence has not gone. Brought into contact with the Japhetic race in India, Persia and the Greek provinces, Asiatic teachers gave a spring to minds more active than their own, the pupil advancing most after being separated from his teacher. The consideration of this field in the History of Painting naturally requires, *first*, a brief survey of rudimentary painting; *second*, a special notice of Egyptian painting as the type of its class; *third*, a rapid glance at the declining phase of this order of art as we turn eastward; and *fourth*, a mere allusion to the westward advance, opening into the grand vista of the Grecian history of this art.

SECT. 1. THE RUDIMENTARY STAGES IN THE EARLY HISTORY OF PAINTING.

The childhood of an individual is illustrative of the childhood of the human race; and as some individuals never go beyond childhood's developement, so it has been with some families of mankind.

The rudimentary stages of painting as an art seem to have been attained by the Asiatics at the very earliest period of authentic history; and in their preserved works the germs of the art are readily traced.

A child's first effort at coloring is limited to the mere putting of color on some object, as on the engravings in a school-book, whose form has awakened an interest. The simple, pure, uncompounded colors are his first delight; and he is never happier than when with simple red, yellow, and blue he can cover one picture with this and another with that color. The Asiatic painter has retained permanently this first characteristic of rudimentary painting, the love of the simple or gaudy colors.

A second stage is entered when the child from the desire for contrast introduces more colors than one into the same picture; spreading one of his gay colors on one object and another on another, or painting one part of an object, as the coat of a man, of one color, and another part, as his hat, of another color. In this second essay, though the idea of contrast has dawned on his mind, no idea of propriety has been conceived; for a tree may be painted red, a cow blue, a man's hat yellow, without any apparent thought whether the color chosen is appropriate or not to the object. It seems to be enough that objects shall be colored, and the colors be in contrast; without regard to *the* color which each object really has in nature and should have in art. This stage, again, may become permanent in rudimentary art.

A third stage of a child's progress in coloring is reached when the germ of the idea of distinctive colors arises; though only approximate in its conceptions and partial in its applications. The human countenance seems to claim early attention as peculiar in its hue; and as an approximation to its tinge the color red is chosen. The whole face, however, lips, cheeks, forehead, have no gradation, from the ruby-red of flesh-tint proper to the almost white of a portion of the features. It is only the germ of the idea of propriety in color that has been conceived; it is but a distant semblance to reality that is attempted, and it influences the artist's choice of colors only in parts of his work, such as blue for a coat, and red, yellow or some other counter color for a vest or trowsers. This feature, again, of the child's early essays becomes a permanent one in Asiatic painting, and can be traced in every land and age where it has prevailed.

The last stage of advance in this order of painting has been a simple increase in the number of materials employed as pigments.

The Egyptians, as careful observers agree, used at least six different colors; while the Japanese of modern times employ a much greater variety. These varied colors, however, seem not to have been produced by the intermixture of pigments so as to create at the artist's will new intermediate hues of studied adaptation to the subject painted. They were manifestly substances found colored in nature, and used as found; having no definiteness of hue, and incapable of being made real copies of the endless varieties of color found in nature. As the natural result of the use of such natural pigments, as well as the convincing proof that they are thus natural, not artificially mixed colors, there is in rudimentary painting no gradation of hues; this effect being secured by the continual and increasing addition to the fundamental color of a lighter pigment to produce a lighter hue and a similar addition of a darker pigment to produce a darker shade. The lack of graded color is a feature characteristic of rudimentary painting; almost always observable in Asiatic coloring.

It is to be observed that the coloring thus described is laid upon drawings imperfect in form, lacking anatomical correctness and symmetry, entirely destitute except in the exceptions to be noticed of perspective, and having no indication of rotundity from shading. So palpable to observers in all ages is this utter deficiency in rudimentary painting that Ælian, the Roman historian, remarks, that the early painters inscribed under the pictures they had executed, "This is an ox, that is a horse; this is a man, that is a tree." In fact while Asiatic sculpture and architecture may lay some claim to merit as works of art, because form may, as Chinese skill shows, be accurately copied, while color cannot be, the rudimentary painting of the Asiatic can scarcely be ranked as a fine art.

Sect. 2. Egyptian Paintings; the type of Simple Coloring, without perspective, shading or propriety of hues.

The abundant relics of Egyptian paintings, which, though executed centuries before the Greeks began their career in art, have survived for ages, while the works of that superior people have perished, has given them a place in the history of the art such as their comparative merit does not justify. That preservation, however, due in part to the peculiar dryness of the climate, in part to the skill of the Egyptians in hiding the entrances to their tombs and thus protecting their interiors, have given a rare opportunity for the study of the methods of those ancient artists.

The influence of Asiatic mind upon the art of painting in Egypt,

alluded to in the statement of their association with the Hebrews in the Old Testament history, is illustrated also by Herodotus and Pliny in their mention of the Arab tribes on the edge of the desert, who mingled with the Egyptians though they could not eat together, and communicated by an interpreter. Pliny, moreover, states expressly that "Gyges the Lydian introduced painting into Egypt;" the Lydians being among the most advanced of the Asiatic family. As to the antiquity of the art in Egypt Pliny adds, "the Egyptians affirm that it was invented among themselves six thousand years before it passed over into Greece;" which he regards "a vain boast," as to extent, though not as to precedence of time.

The character of the coloring matters used in Egyptian painting alluded to by ancient historians is illustrated by modern investigation. Herodotus mentions the oils now used by painters as products of Egypt, and Pliny alludes to Egyptian varieties of the ochres and other mineral pigments used by the Greek painters of his day; while he gives a description of their mode of painting on silver, and of their skill in fixing colors in dyeing, that intimates a knowledge of practical chemistry in its relation to the arts. Wilkinson makes the statement, "That the Egyptians possessed considerable knowledge of the metallic oxides is evident from the nature of the colors applied to their glass and porcelain. They were even acquainted with the influence of acids upon colors; being able in the process of dyeing or staining cloth to bring about changes in the hues by the same process adopted in our own cotton works." The grounds upon which the Egyptians executed their paintings were three. They painted utensils, and carved work; laying colors on statues, altars and columns of stone; and also spread metallic pigments on pottery and other moulding in clay to be burned in by the heat of the furnace. Next, they carried wall painting to an extent unexampled in the history of nations; the entire interior of their extended tombs, and of many of their vast temple halls, being completely covered with painting laid upon stucco. The third class of grounds employed by them were cotton prepared with bitumen and lime cement, also papyrus paper made of the vegetable fibre of the various species of water lily, whose own gum gave it at the same time the consistency it needed as writing material and painters' canvas; whose use was the germ of limning and missal, and even of tablet and easel paintings.

The general style of Egyptian painting and the stages to which it advanced, were marked as clearly by the Roman historian as it can be now observed by the student of art in Egypt. Pliny after alluding

to the high antiquity of painting as it existed in his day in Egypt, adds: "All agree that the first stage of painting was the tracing of the shadow of a man in lines on a wall; that the second was executed with single colors in the style called *monochromaton;* afterwards that a more elaborate style was invented; and such it continues even now." Upon a mere outline drawing entirely destitute of shading, consisting of figures of men and every variety of object placed side by side or in lines above each other without any regard to the diminution of size by distance, the Egyptian painter with his six colors gave to each one unvaried, ungraduated hue. Their imitative skill, however, enabled them to give a definiteness, though not an accuracy, of hue that is the constant admiration of the tourist as he lingers for days with torch in hand tracing the varied representations on the walls of Egyptian tombs. The Egyptian artist always distinguished the native from two classes of foreigners both in color and form; making not only the features of the Egyptian intermediate between the thick bulging lips, the flat nose and the curly hair of the Ethiopian and the aquiline nose, thin compressed lips and straight hair of the Arab, but also giving him a reddish-brown color mediate between the jet black of the African and the straw-yellow of the Asiatic. Different kinds of grain are distinguished, not simply by the shape but by the color of the kernel, as wheat by its brown-red and barley by its yellow-gray hue; while in the representations of workers in metal gold is known by its yellow tinge, bronze by its greenish cast and steel or hardened iron by its azure hue.

Of the connection between Egypt and Greece in the history of painting and of the reason why Egypt made no advance beyond rudimentary art, while Greece having first learned from her as a primary teacher went far beyond her instructor, Plato says in his "Laws," "The art we have proposed for the education of youth was known long ago to the Egyptians; that nothing but beautiful forms and finished music should be allowed an introduction where the young are gathered. This people having fixed by statute what forms and what music should thus be licensed, they had them represented in their temples. Nor was it lawful for painters or other inventive artists to execute forms different from the established model; neither in painting, nor in sculpture, nor in any department over which the Muses presided, was it admissible to make the least deviation from the authorized standard. Upon careful examination, indeed, it will be found that the pictures and the statues made by this people ten thousand years ago are neither an advance upon, nor inferior to those

which they now execute." The Egyptians were thus in their painting the true type of the Asiatic style; incapable of passing beyond rudimentary notions; while of the higher principles of art they never showed any practical conception.

Sect. 3. The Painting of Eastern Asia; the declining phase of rudimentary coloring.

In tracing the art of painting eastward from Egypt, where its true type was left embalmed with its dead artists for all future ages to study, we might pass over the entire track already followed in considering the history of sculpture and architecture. In India, ancient and modern, in Burmah and Siam, and thence through the great Chinese Empire along the line of the Pacific Isles into Western, Central and Southern America, we should find the same general characteristics, with a tendency towards greater degeneracy as we proceed Eastward; illustrating the fact that the Asiatic family simply maintains its ancient stage of progress where no causes unfavorable exist, while it declines in art if any circumstance intervenes to break up its hereditary cast or connection. It will suffice to notice as single specimens, the true traditional type in China; the somewhat improved style, arising from the energy imparted by insular life and perhaps by intercourse for two or three centuries with Europeans met in Japan; and the most degraded degeneracy found among the Indians of North America.

The traveler in China, so far as painting in one of its branches is concerned, sees perhaps a reconstruction of ancient Egyptian life with its perishable works of art; and this reflection may serve as a key to the resemblances and the differences between ancient Egyptian and modern Chinese painting. In China most of the painting which attracts the observing student, specimens of which are abundant in every mart having large commerce with Europe, is of two of the classes already mentioned as found in Egypt. Wall painting has by no means the large place it had in Egypt: the northern climate of China forbidding the decoration of tombs, while the walls of structures above ground are built of a lighter and more fragile material scarcely justifying the Egyptian elaborateness of coloring. Most of the Chinese painting proper is executed upon paper, cloth, glass, porcelain or some kindred ground. On paper and cloth the colors are chiefly vegetable, sometimes ochres; and are evidently done with water as a vehicle. Often the ground lacks the consistency essential to prevent the spreading of the pigments; as is illustrated in the pic-

tured fans and other kindred articles imported from China, whose consideration belongs properly to Decorative Art. The paintings of portraits on porcelain, glass or kindred material have an adhesion to the ground, a depth and indeed embossment of colors, a clearness if not transparence of hue, and a finish and polish of varnish that speaks of a power quite equal to that of the Egyptian artists. There is however manifestly no genuine likeness to the original; for while mere costume is made to vary in hue, there is no departure from the stereotyped, placid, passive expression. There is, moreover, no attempt at gradation of tint; all flesh is the same flesh, and all blue or gold is unchangeably one in shade. In the third department, that of *terra cotta* staining, the Chinese coloring on porcelain shows an art perhaps not surpassing that of the Egyptians in their palmy days, but certainly surpassing the kindred art of modern times; a fact to be considered in Decorative Art. In each of these three departments it is specially to be remarked, however, that none of the higher principles of art are traceable. As to back-ground there is only an apparent not a real attempt at perspective; for while the Egyptian made figures designed to be more distant occupy separate compartments, as distinct pictures, marked off by separating lines, the Chinese trace indeed a connecting ground-plot, designed to extend back to figures in the rear; their attempt, however, being so destitute of scientific accuracy as to make this ground-plot a perpendicular, on which the rear figures seem to hang suspended over those in the front, and to be falling forward out of the picture.

Passing eastward from China the large island of Japan presents a people truly Mongolian or Asiatic in cast of mind as of features; but from their insular position, which makes them necessarily a specially commercial people, they are gifted with rare energy and inventiveness and have a readiness to learn from foreigners. Either in earlier or later times, perhaps since the settlement of Portuguese and Dutch merchants, the Japanese painters have learned the rudiments of admixture and gradation in colors, of perspective and of chiaroscuro. In addition to the colors used by Egyptian artists, black, white, red, yellow and blue, the intermediate hues crimson, scarlet, pink, rose, purple, saffron, purple-maroon, light and dark blues, and also various shades of brown, are employed by them. In their landscape views rivers with groups of men in front, boats on the stream, and trees and mountains on the opposite side, are presented; with a marked though not accurate diminution from distance which indicates an intuitive, though not cultured perception of the laws of perspective. Still

more, in the representation of water and cloud, in whose execution so as to have anything like the appearance of nature there must be a certain measure of the knowledge of chiaroscuro, the Japanese have, from some quarter, learned at least the first lessons. In the sky of their landscapes there are lines of clouds representing twilight; the lower ones being of a pink-tint and the upper of a darker purple; while in water, that near the shore is painted of a saffron tinge, and that farther off of a maroon or purple brown. In neither clouds, water or flesh tints, however, is there any gradation proper of shades and tints indicating true admixture of pigment: the only approach to it being a sort of dilution or decreased thickness in the laying on of the pigments towards the border of a color, giving it only an apparent shading into the hue next to it. The Japanese, therefore, neither in form or color nor in their approach to perspective and chiaroscuro, have science or art proper. Like the Chinese their painting is not the product of that originating genius which makes the arts of design, but the mere imitative skill which gives birth to the mechanic arts.

Leaving this home of the most advanced Asiatic family, the smaller isles of the Pacific and the coast of America with their present population, evidently of Asiatic origin, present only the rudest attempts at coloring. Though the ancient inhabitants of the American coasts evidently brought with them the true traditional type of Asiatic painting, as well as of sculpture and architecture, the more perishable monuments of this art are obliterated or unknown; and the savage tribes that have succeeded them have no painting proper, but only implements colored with one hue, and rude figures traced in one or more of the pure colors, on sandals, robes, girdles or headdresses made from the skins of animals.

Sect. 4. The Painting of Western Asia; the advancing phase of Rudimentary Coloring.

The line of improving art in painting, as we go northward through the western part of Asia, is as manifest as that of architecture and sculpture already traced; though its memorials of past ages are more decayed because more fragile. In Arabia the past history of painting has no monument or authentic record to illustrate its character; that of the Hebrews in Syria is commemorated only by scattered allusions of their sacred historians and poets; but the unburied monuments of Assyria, some relics in Persia, and some faint traces of the past in Asia Minor, are now revealing its true character. All these successive testimonials show an enlarging phase of the art, brighten-

ing as it moves towards Greece, and confirming the fact that always in human improvement the links of gradual advance exist, though they may not always be traced. The modern style of coloring, now met in all this region, is, as we shall see, no index to its past character; since Greece itself in this art has for long ages presented nothing but the old Asiatic type.

In the line thus hinted, the Hebrew painting is first to call attention. In this art, as in sculpture and architecture, there are three culminating eras to be observed; that of Moses and of Egyptian teaching; that of Solomon and of Phœnician or Assyrian influence; and that of Herod the Great and Roman control. In the first age the art had, in respect to pigments, advanced beyond pure colors; for we read not only of red and blue, but also of scarlet and purple.[1] The art of that day, however, reveals nothing as to coloring except in dyed and needle-work, executed upon skins and linen; for, a wandering shepherd race, such as the Hebrews then were, have only coats, girdles and tent-hangings on which to bestow their skill in coloring.[2] The colors employed were vegetable; Josephus mentioning of the materials furnished by the people that they brought "flowers for the purple color and others for the white; with wool also dyed by the flowers before mentioned." The figures wrought in by needle-work were after the order of Egypt, though probably of a higher finish, and avoiding their gross conceptions; since Josephus states that the "curtains were composed of fine linen, blue, purple and scarlet; and were embroidered with numerous and various kinds of figures, excepting the figures of animals." In the second era of the art of the Hebrew coloring, in addition to the customs of the former age, pavements of mosaic inlaid with stones are introduced; for which, in making his preparation for the rearing of the temple, Solomon provided "glistening stones of varied colors," to which as they gleamed on the temple pavement Isaiah poetically alludes in Jehovah's promise;

> "Behold I will lay thy stones with fair colors;
> I will lay thy foundations with sapphires."[3]

In this age, too, wall painting proper seems to have existed; for though the inner walls of the Hebrew temple-shrine were all overlaid with gold, which admitted engraving but no coloring, sumptuous

[1] Exod. xxv. 4, 5.

[2] Gen. xxxvii. 3; Exod. xxv. 5; xxvi. 36; xxviii. 39; Judg. v. 30.

[3] 1 Chron. xxix. 2; 2 Chron. iii. 6; Isa. liv. 11.

private mansions were "ceiled with cedar and painted with vermilion."[1] In the third era, though structures for secular purposes, as the palaces erected by Herod, took the characteristics of Roman art in painting as well as architecture, yet no painting proper is found in the description of the sacred temple; only the curtains being spoken of as adorned with "purple flowers."

In Assyria the researches of Layard, aided by the scholarship of Wilkinson the Egyptian antiquary, have thrown much light on the character of this department of ancient painting. Of the colors employed we have a testimonial in the sacred narrative of Esther; the author of which alludes to a palace of the Medo-Persian king as adorned with "white, green, and blue, fastened by cords of purple;" and with "a pavement of red and blue and white and black marble." Modern investigators have found the same colors used in Egypt; and of these colors Layard gives the following illustrative statements: "The only colors first used by the Assyrians, since they are those employed by all nations to give effect to their earliest efforts both in sculpture and architecture, were probably blue, red, yellow, black and white." "These colors alone were used in the painted ornaments of the upper chambers of Nimroud." "The tints formed by their combinations may have been introduced at a later period." As an illustration of the improvement in Assyria upon Egyptian coloring, after having mentioned the "prevalence of red" in Asiatic colors, Layard says, "The Assyrian red exceeds in brilliancy that of Egypt." "It nearly approaches to vermilion on the sculptures of Khorsabad; and has a bright crimson or lake tint on those of Nimroud." This fact intimates an original superiority in Assyrian pigments over Egyptian; as also superior skill in the artists of that region; since the climate of Egypt has better preserved like works. In confirmation also of this original superiority and native pre-eminence of the artists of this region, under the influence of Persian teachers, Layard adds as to their skill in modern times, "Dyes of the finest qualities, particularly reds and greens, which even European ingenuity has not been able to equal, are obtained by the inhabitants of Koordistan from flowers and herbs growing abundantly in their mountains."

This last allusion of Layard suggests the first class of uses made of colors by the ancient Medo-Persians. It is illustrated in the wall "hangings," or curtains already alluded to, as mentioned in the book

[1] 2 Chron. iii. 4, 5; Jer. xxii. 14.

of Esther. A second class of Assyrian painting, or use of colors by that people was in the decoration of statues and other sculpture; illustrations of which are thus given by Layard. "No trace of paint except in the eyes and on the hair has yet been found on the human body in Assyrian sculpture;" a fact illustrating the ancient as well as modern Eastern custom of painting the eyelids and dyeing the hair. He adds, "On the colossal lions and bulls forming the entrances to temples, color only remains in the eyes; the pupils having been painted black and the rest filled with a thick white pigment." A kind of Assyrian ornament, partaking of the nature both of porcelain coloring and of wall painting, is suggested by Diodorus in the days of Augustus, who states that 'the figures of men and of animals seen on the walls of the palace of Semiramis at Babylon were painted on the bricks before they were put in the furnace.' Either this, or true wall painting, is referred to by the Hebrew prophet, Ezekiel, when in abhorrence he observed that the corrupt priests had copied the customs of the Chaldeans; and he saw "every form of creeping things, and abominable beasts, and all the idols of the house of Israel portrayed on the walls;" a fact illustrated farther on, in a subsequent allusion to the city of Jerusalem pictured as a harlot;—

> "She saw men portrayed on the wall,
> The images of Chaldeans painted with vermilion,
> Girded with girdles upon their loins,
> Exceeding in dyed attire upon their heads,
> All of them princes to look to,
> After the manner of the Babylonians of Chaldea,
> The land of their nativity." [1]

True wall and ceiling painting is still found among the ruins of Assyrian cities; an instance of which Layard thus mentions; "The ceilings were divided into square compartments painted with flowers or the figures of animals."

As to the condition of the art of painting among the ancient Persians only scattered allusions in poets like Homer, and in historians like Herodotus can give any idea, since there are no monuments left as in Egypt and Assyria, to serve as guides in reconstructing the age. The fact that the Persians were a leading race in the arts of architecture and sculpture, and that now they are in advance of any Asiatic nation in painting, as the specimens of their works that now

[1] Ezek. viii. 10; xxiii. 14.

reach Constantinople and meet the eyes of Europeans show, is sufficient testimony that the advancing phase of this art passed also through ancient Persia. The very early rise, also, of painting as an art among that superior race called Arian by the ancient Greeks, is manifest from many considerations. Pliny's mention, already referred to, that Gyges the Lydian introduced painting into Egypt. which must have been at least 2000 years before the Christian era or before the days of the Hebrew patriarch Abraham, is a pregnant hint; the more important since Pliny himself to confirm the very early and Arian origin of this higher art refers to Homer's allusions to different kinds of painting existing among the Greeks at the time of the siege of Troy; as the vermilion applied to finer works, as well as to ship's prows; while also among the Trojans, who belonged to the older family of the Arian stock, abundant evidences of great progress in the art of coloring are given by this early poet. In tracing the history of Grecian painting we shall observe that its earliest, and in all future ages its chief home, was in the Asiatic provinces; in which region native Grecian genius, coming into contact with a race inferior to itself, yet superior to the Asiatic family, received its culture, and prepared itself and the world for an entirely new era in this art.

CHAPTER V.

GRECIAN PAINTING; NATURAL COLOR UNITED TO IDEAL FORM.

Though ideal forms, made up of associated beauties gathered from many examples in nature, are the climax of art in sculpture which embodies form alone, the attainment of nature's perfect coloring is the height of art in painting, since there is no ideal of color corresponding to ideality in form. The Greeks having attained the greatest perfection of ideal form in their sculpture would have faltered in their own chosen pathway of excellence had they not attained to true naturalness in color. The union of these two features, ideal form and natural color, seems to have been the achievement of the Greek painters.

The work of analyzing the history of painting among the ancient

Greeks, is specially difficult; and that for three reasons. First, the relics of ancient Grecian painting, unlike their sculpture and architecture, have all perished; so that it is only from scattered allusions in classic writers such as Plato and Aristotle, Cicero and Horace, and brief descriptions by historians and tourists such as Pliny and Pausanias, that material for such an analysis can be gained. Coming again to the Greek and Latin authors, their records as to art, that of Pliny excepted, are found to be fragmentary; while the necessary employ by them of technical terms, partially illustrated in sculpture and architecture by comparison with the works themselves, but unexplained in painting, make the study not only a difficult but uncertain one. Yet again, while in the departments of Grecian sculpture and architecture, able critics like Winckelmann have gone over the field with such thoroughness that the attempt at a general analysis of the history of these arts is made easy, no kindred analytical works have been attempted in the department of Grecian painting. It is only after a laborious examination and comparison of the original authorities, with the aid as to age of artists and references to their works furnished in the Alphabetical list of Sillig, the study filling up an entire year, that the chapter here presented has been prepared.

Pliny's opening allusion in his brief history of ancient painting gives the germ for an extended division of the subject. After alluding to the decline of the art of painting in later Roman times, and dwelling on its former high cultivation in Greece, the progress of the art in Greece is indicated in these two condensed statements. "The Greeks affirm that the art of painting was discovered, some say at Sicyon, others among the Corinthians; all affirm that it began with the mere shadow of a man around which lines were drawn. Such was the art at first; the second stage was in single colors called *monochromaton;* after which a more elaborate method was invented; and such it continues until now." Farther on he developes the history of the improving methods of *coloring*, as distinct from *drawing*, thus: "At length art distinguished itself and invented light and shade; the employ of differing colors, alternating with each other, producing this effect. Afterwards again there was added lustre; this being another thing than light: which, since it is between light and shade, they called *tonos;* while they named the commingling of colors *armoge.*" The steps of progress here obscurely hinted seem to be the attainment first of shading in colors, second of the conjunction and inter-blending of hues, and third of gradation of lights or chiaroscuro. This connected statement of the only ancient historian of

the art, though obscure, is of value in reaching a practical division of the subject; though scattered hints found in Pliny and in other writers render more important aid in the development of the history.

Sect. 1. The Formative Period of Grecian Painting, during the Ages of the Greek Lyric and Epic.

The period covered by this early and rudimentary history is about seven hundred years; commencing with the fall of Troy about B. C. 1184, and ending with the time of the restoration of the Athenian Democracy, B. C. 510. It began with Euchir, so called, probably, because of the beauty of his execution with the hand; whom Aristotle mentions, perhaps symbolically, as the originator of Greek painting, speaking of him as a near relative of Dædalus, the early sculptor and architect, who lived between B. C. 1200 and B. C. 1300. A century later, about B. C. 1068, when after the conquest of Troy the Grecian colonies in Asia Minor were fully established, in the age of the bards who prepared the way for Hesiod and Homer, a rapid spring was given to the growth of Greek genius in different departments of art. The generous rivalry of genius at that age was symbolized doubtless in the reported contest of these two great masters in the highest of the arts, that of poetry: Homer born in the Asiatic colonies, and Hesiod in the heart of Greece, fitly memorializing the fact that a noble emulation already existed in arts and letters between the colonies and the mother country.

To this age four eminent ancient painters are referred; to three of whom, Philocletes, Cleanthes and Crato, so universally does the spirit of ambition call forth rivals for the honor of discoveries in science and of inventions in art, has been attributed by different traditions the origin of drawing in outline; while two of them were painters of merit in their day. The first of these was a native Egyptian, who evidently had come to seek his fortune in the country newly rising in his times; while the latter two were native Greeks born and reared at Corinth and its neighbor and rival city Sicyon. Of these Cleanthes at least was a painter; associated with whom was an artist named Arego; whose paintings in the temple of Diana on the river Alphæus in Elis, were mentioned by Strabo as admired in the Augustan age of Rome, and were quoted in the second century of the Christian era by both Greek sophists and Christian apologists as specimens of the artistic religious spirit of the early Greeks. A century later, probably, while Homer's poems not yet gathered as an epic were chanted as ballads, two other artists are named, who

were rivals for the invention of rudimentary *shading;* heretofore not known to Grecian as it was not to Egyptian painters. These improved artists represented those same two Grecian centres; their names being Ardices of Corinth and Telephanes of Sicyon; and their invention Pliny regarded an era in the history of the art of painting.

Next followed improvement in *coloring* proper. Thus far the *mixing* of colors for the purpose of shaded hues was not introduced; though, long before, Philocles the Egyptian had been familiar with six colors as there used, without admixture or gradation of hues. Four artists are mentioned by Pliny as leaders in this department; one of whom, Cleophantus, a Corinthian painter, living in the 30th Olympiad, or about B. C. 655, used "ground earthen-ware" as a pigment, evidently seeking a flesh color. Yet later, but evidently near the age of Homer, arose the artist Eumarus, the first painter mentioned as appearing in Athens, afterwards the mistress of Greece in art; of whom Pliny relates that "he was the first to make a distinction of sex in painting." This statement must of course have its proper qualification, since in Egyptian drawings and paintings, males and females are distinguished by their dress and hair, though without the nicer distinctions of features and anatomical structure.

The last and greatest step in the progress of this rudimentary age was the successful effort to execute portraits recognized as likenesses. Pliny mentions a painter named Leon who painted a portrait of the sweet lyric poetess Sappho, who flourished in the age of Esop, or before B. C. 600. Such a work required an artist, who, passing beyond the mere distinguishing in general of men and women, could copy the nicer lineaments of separate features in which every individual man or woman differs from his or her fellow.

While noting this progress of the art in Greece proper, where the records were better kept, Pliny mentions with enthusiasm a single instance of its advancement in the Greek provinces of Asia Minor. "Surprise," he says, "need not be felt at the dignity to which this art so early attained in Greece, when the historic fact must be admitted that the picture of the battle of the people of Magnesia, in Lydia, against the Cimmerian barbarians, executed by Bularchus the painter, was purchased for its weight in gold by Candaules the king of Lydia." This Bularchus, Pliny thinks lived in the age of Romulus, or about B. C. 720.

Sect. 2. The Advancing Development of Grecian Painting under Aglaopho and Damophilus in the age of the Greek Drama.

As the rise and early triumph of lyric and epic poetry in Greece,

the twilight after the ballad dawning of literature, had doubtless its influence on the progress of the plastic arts, especially of painting, so the second stage in the development of the special genius of the Greeks for poetry, the drama, had a manifest connection with the second stage, in the development of painting, the specially illustrative art. In the 61st Olympiad, or about B. C. 535, Thespis first introduced scenic representations into Athens. Shortly afterwards Æschylus was born; at an early age he began to write tragedy; and in the fourth year of the 73d Olympiad, or B. C. 485, he gained his first prize for excellence. Sophocles grew up in the atmosphere of Athens when the perfected drama was absorbing public thought; and in the fourth year of the 77th Olympiad, or B. C. 469, he took the palm from his older rival Æschylus. A little later, in the 81st Olympiad, about B. C. 455, Euripides was in the field; and the current of popular favor, at Athens, set so strongly towards dramatic literature, that only the scurrility of Aristophanes, some fifty years later, arrested it, and turned the stream into another channel.

A double influence seems to have been exerted by this new bent of the Athenian mind and this new class of poetry then holding sway. A general impulse was given to art of a higher order; the people who demanded finely executed scenic representations were ready to pay for artistic skill in painting, which could alone supply it; and in consequence of the call for men devoted to the art of painting, new genius was called out and higher attempts were made by true artists in works aside from and far above the field of mere stage decoration. At the same time a taste for large and extended paintings, to be seen at a distance, was awakened; which led on to that higher walk of the art, fresco or wall-painting. In tracing carefully the scattered hints preserved of this age, a central cluster of artists developing in both these departments stands out in relief; while around and behind them is grouped a crowd of inferior men, who not succeeding in the more worthy line of advancement made themselves a name as mere scenic sketchers, either of the higher tragic or lower comic scenes. The artists in higher walks were the leaders; the scenic painters proper were but imitators.

The great early master in easel studies, or in historical subjects associated with higher portrait, was Aglaopho, contemporary with Æschylus; whose son Aristopho is usually mentioned with him. Their celebrated paintings were studies in the legendary age; the heroes of Troy being their special subjects. Living at the same day was Cimon, successor in portrait to Eumarus of the former age; who at-

tempted what Egyptian and Assyrian painters had not assayed, the taking of portraits at oblique or quarter views; the idea that such is the best view to bring out characteristic beauties of form having been already conceived and made controlling in sculpture and architecture. The works of this noble master found afterwards a marked place in the allusions of such critics as Cicero and Quinctilian; the latter of whom, speaking of Aglaopho and his second son Polygnotus, who belongs to the next age, makes the following truly philosophic comment. "First among those whose works should be seen not simply on account of their antiquity, are the famous painters Polygnotus and Aglaopho; whose uncompounded color so captivates the minds that study it, that those almost rude first steps, as it were, in the future art are preferred to the greater masters who lived after them on account of a certain natural yearning we have to learn originating elements."

The great leading masters in the second department of wall painting, cultivated in this age, Damophilus and Gorgasus, are yet more marked because they were drawn from Greece to Rome, then rising as a city, and already adorned with architectural and sculptural monuments wrought by the Etruscan artists living north of the Tiber. Speaking with a sort of natural pride of his own city, Pliny says, "Damophilus and Gorgasus, most lauded in plastic art, were at the same time painters; who adorned the temple of Ceres in the Circus Maximus at Rome, with both kinds of their art; verses in Greek inscribed upon their works indicating that those on the right were by Damophilus and those on the left by Gorgasus." The description of their work shows that it was fresco-painting on stuccoed walls; the Greek inscriptions indicate their Grecian nativity; contemporary history intimates that this temple was built and dedicated B. C. 493, corresponding to the Roman era A. U. C. 261, and to the Grecian Olym. 71, 4, during the very age of Æschylus and Aglaopho; and the fact that two such men should be called so far from home in such an age is a testimony both to the advancement of this species of art, and to the rare merit of these artists in it.

The wide-spread influence of the spirit pervading Greek painting at this era is seen in the fact that at Rhegium, in that part of southern Italy which began to be colonized by Greeks about B. C. 1055, which from Grecian supremacy was styled Magna Græcia, and which at the period mentioned, about B. C. 500, was the seat of the greatest philosophic school in the world, that of the Greek philosopher Pythagoras, there appeared at this very time an eminent painter named

Sillax, belonging to the class of wall painters. Two Greek authors refer to a memorable painting of his on the walls of the "portico of the Polemarchia" at Phlius; the reputation of this artist having called him in the opposite direction of that taken by the artists just named; from Italy into Greece to the little republic nestled between and at the south of those two homes of art, Corinth and Sicyon.

The artists devoted to *scēnographia*, scenic decoration proper, seem to have been numerous. Among them as a leader, and apparently a true historical type of his class, was an artist named Serapio; of whom Pliny says, that, "having proved unsuccessful at portrait painting, he turned his hand to scenic painting, in which he attained eminence." Another of his class was Eudorus; of whom Pliny merely remarks, "he is admired for his scenic paintings." Yet another was Clisthenes, an architect, who in addition to erecting theatres painted scenery; whose son, as Diogenes Laertius mentions, was a pupil of Plato; thus indicating that it was late in this age when this artist flourished. A still later representative was Pauso; the moral influence of whose scenic pictures, tinged with the spirit of his contemporary Aristophanes, Aristotle at a later day condemns. To this same age also probably belonged the painter Cratinus, mentioned by Pliny in connection with other scenic painters, who adorned the public store-house called Pompeion at Athens with comic scenes; to whose daughter, also a painter, and to a picture by her of a priestess of the Eleusinian rites of doubtful moral and religious character, the able Christian Father, Clement of Alexandria, alludes with disapprobation. It is worthy of notice that though the paintings of this age belonged to the class called monochromatic, or those of unmixed though varied colors, their works are alluded to with admiration by such men as Plato, Cicero, Quinctilian and numerous kindred authorities. Both Cicero and Quinctilian speak of these masters as using "simple" or "uncompounded colors." To this influence on superior artists the special opening of Egypt by the Persian Conquest, before as exclusive as in modern times the Chinese have been, and the consequent free intercourse between its wise men and Herodotus the tourist and Pythagoras the student, a privilege which must have reached artists and shaped their studies, may have tended. In the inferior art of scenic painting, the gaudier colors without graduation of hue, are always characteristic.

SECT. 3. THE RECOGNITION OF PAINTING AS A SISTER ART UNDER MICON AND POLYGNOTUS IN THE AGE OF PERFECTED SCULPTURE AND ARCHITECTURE.

If the progress of Poetry as the noblest of the Fine Arts, though of a class so different, exerted the influence already observed on the advancement of Painting, it might be anticipated, and for a stronger reason, that in the age when Architecture and Sculpture reached in Greece perhaps the hightest perfection they have ever attained, a new and peculiar character would be induced in the third of the triple band of sister arts called plastic; Drawing of course being perfected with Sculpture. The age of perfected Sculpture and Architecture in Greece was the age of Pericles, the statesman, who rebuilt Athens, and of Phidias the comprehensive artist who planned that rebuilding. Pericles and Phidias were both born in the 70th Olympiad or about B. C. 500, both were at the height of their glory at the age of fifty years, and both died when nearly seventy years old; Phidias Olym. 87, 1 or B. C. 432, and Pericles two years after, Olym. 87, 3 or B. C. 430. During the period of about fifty years, constituting the third era in the history of painting, the Athenian people were perfectly absorbed in the adornment of their city with those works of sculpture and architecture at which the world still wonders; this versatile race, from perfect absorption in the drama, gave themselves wholly to plastic art; as in the subsequent age they thought only of philosophy.

As during the previous era the decoration of the stage and scenic painting had been the leading demand and had given character to the developing art of coloring, so in this new age the decoration of works of architecture, particularly of the inner walls of porticoes, was the absorbing end of this art. Not only did sculpture exhaust its skill in the bas-reliefs cut on the inner frieze and the outer metopes of such structures as the Parthenon; historic paintings as rich in color and expression as the genius devoted to that art could make them, covered the inner walls of the Propylæa, of the Poicile and of other porticoes about the Acropolis and Agora of Athens. While thus there was a demand in the progress of Grecian civilization for improved painting there was an advance in science making it attainable. Mathematical science, perfected in practical application as well as theory by Pythagoras, was now directed to the fixing of proportions in forms; the accumulated chemical knowledge of the day was devoted to the improvement of pigments; and the germs of

the study of proportion in hues and shades in coloring, were already started. As an indication of this new study, it was in this age that the idea of an azure back-ground in the marble niches for statues, to set off their virgin whiteness, seems to have been conceived; as we shall see at a later day statues themselves began to be colored with a varnish having a flesh tinge.

The central and later representatives of the progress of the art of painting in this age were Polygnotus and Aglaopho, and the characteristics of the advance then made may be learned by comparing the allusions made to these two artists by Pliny, Quinctilian and Cicero. Quinctilian, as already observed, mentions Polygnotus, as one of the earliest painters admired as a master; practising the "rudia primordia" or rude first steps of his art; while "simplex color," or unmixed color was the method still prevailing. Cicero, alluding to great masters excelling in methods so different that no one could wish them to have been of the same age, cites three names, Zeuxis, Aglaopho and Apelles; the first a leader in the Fifth and the latter in the Sixth age of Greek painting, while the second is a representative of the latter part of the Third age. Pliny gives his estimate of this era in closing a criticism upon the picture of the Battle of the Athenians against the Persians at Marathon, painted on the Poicile; remarking that the accuracy in the likenesses of the generals illustrated how far "the use of color had improved," and to what an extent "the art was perfected." In fact at this period painting had attained such a merit as to prompt Pericles and Phidias to court its co-operation as a "Sister Art" with Sculpture and Architecture, which then had attained their climax of majesty if not of grace.

The first artists belonging properly to this age are Micon and two or three predecessors of Polygnotus. Pliny couples Micon and Polygnotus; first in speaking of the colors yellow and blue, and again of a black pigment invented by them; improved material for coloring being an attainment of the era. Micon painted on the Poicile, a battle-scene of Theseus and the Athenians against the Amazons; then three others in the newly erected temple of Theseus, one of the Athenians and Amazons, another of the Centaurs and Lapithæ; and all on ancient legendary themes. At a later day he assisted Polygnotus in painting the temple of the Dioscori at Athens; his theme being the legend of the expedition of Castor and Pollux to Colchis. Still later, in company with Panænus, the cousin of Phidias, he attempted a theme of recent history, the battle of Marathon, in the Poicile; in which having the independence to paint the Persians of larger stature

than the Greeks, he was fined by the fickle democracy of Athens. Micon excelled in figures of horses; on which in his best pictures he bestowed great labor.

Of the history and style of Polygnotus as an artist, the notices of Plutarch in his life of Cimon, of Pliny and Aristotle, as well as allusions by other writers, furnish extended information. Born in the island of Thasos, he was found practising his art there by Cimon the Athenian General; who bringing home the body of Theseus, the old exiled Athenian hero, to be deposited in the temple newly erected to his memory, took the painter along with him to adorn that and the other new structures lately erected at Athens. When Cimon fell into disgrace Polygnotus was employed by Pericles; yet love for Elpinice, the sister of Cimon, led him to make her the model of his famed Laodice on the Poicile of Athens. Of his improved style, Pliny records, "He first painted women with transparent dress, and ornamented their heads with particolored turbans; and he added very much to the art of painting since he introduced the partial opening of the mouth so as to show the teeth." Aristotle ranks Polygnotus among *ethical* painters or those seeking a moral end in their works; and thus alludes to the intellectual cast of his ideals; "Polygnotus painted objects superior to nature, Pauso inferior, and Dionysius like to nature." The works ascribed to Polygnotus are all wall paintings, in the temple at Delphi; in the Propylæa and Poicile at Athens, some of which were cut out and carried to Rome; in the temple of Castor and Pollux, at Athens; in the temple of Minerva Area at Platæa; and on public walls at Thespiæ.

The third great artist of this school was Panænus, the cousin of Phidias. Phidias himself as Pliny assures us began his career as a painter, but left it for sculpture, then farther advanced in Greece. Pliny mentions an improved vehicle in fresco or wall painting used by him. "He washed the plastered wall with milk and saffron; as is at this day perceived, when saliva is rubbed with the finger on the wall, and it gives out the odor and flavor of saffron." The principal works of Panænus were in the temple of Jupiter Olympus and in the Poicile at Athens. The highest ancient eulogiums are bestowed on this artist; Æschines the orator making a beautiful allusion to his battle of Marathon; Pliny arguing the advancement of painting from the excellence of his portraits; and Strabo the Roman geographer thus alluding to the evidence that in the days of Phidias sculpture and painting were wedded arts. "Panænus the painter worked much with Phidias, being his brother and fellow-laborer in

the finishing of his carved work, by decorating it with colors, and especially by painting drapery." It is related of Panænus that in a contest with an artist named Timagoras at the Pythian games the first prize was awarded to Timagoras, who celebrated his own victory by a poem in his own honor; an incident illustrating the frequent fortune of superior artists to be superseded for a time in popular esteem, by inferior men; and also indicating how plastic art, trusting not alone to her own voice invokes the aid of the Muse of Poesy to trumpet her fame. Phidias had a brother named Plistænetus, trained as a painter, but of moderate ability; who had the good sense to adhere to a profession which would not bring him into comparison with his comprehensive brother.

Among men of less genius in this age, Aglaopho, the second, furnishes another instance of the influence of family in bringing out artists. As we have seen, the father and teacher of Polygnotus, Aglaopho first, also his brother Aristopho, were leaders in the previous age. Aglaopho, the second, apparently a son of Aristopho, and of course nephew of Polygnotus, won that encomium of Cicero that no lover of art would wish to have him other than he was. Athenænus the sophist records this history of two of the paintings of Aglaopho, apparently with a spice of irony. "Coming from Olympias to Athens, Alcibiades presented as votive offerings two pictures, the painting of Aglaopho; one of which represented himself crowned by Olympias and Pythias; in the other was seen Nemea seated, and upon her knees Alcibiades himself, more beautiful in features than any woman."

Sect. 4. The First received Schools of Grecian Painting, under Apollodorus and Eupompus, in the Age of Greek Philosophy.

The Athenian people having passed through the period when art reached its climax, and having filled their city to repletion with the choicest works in sculpture and architecture, were prepared after a few years had made the masterpieces of art common, to follow any one that should lead their minds in a new track. At the time when Phidias and Pericles were thirty years old, B. C. 470, Socrates was born. During his youth and early manhood the great works of Athens were in process of completion. His father was a sculptor, as most men of genius would be at such a day; and Socrates learned and for years practised his father's art. But art alone could not exalt the Athenian people. Philosophy, which less than a century before had been ennobled by Thales in the Greek colonies of Asia,

and by Pythagoras in the Greek colonies of Italy, began to awaken an interest in the mother country at Athens. When Socrates was forty years old, B. C. 430, Plato was born; and ere he had matured into manhood the interest of the city of Athens was its philosophic teachers. It was natural that Athenian philosophy should influence the arts; for Socrates the great leader was an artist; and the philosophy of Plato, fitted to the genius of the Greek people, was both in form and substance allied to the spiritual creations of art rather than to the material deductions of science. The tendency of that philosophy has already been noted;[1] the first step towards the revival of classic art among the Florentines having been the establishment by the Medici of a club to read Plato's dialogues and discuss his philosophy.

Discussions in philosophy naturally originated rival schools; Socrates who went everywhere discoursing of wisdom and virtue was succeeded by the earnest debaters of the Stoic school, frequenters of the Stoa or porticoes of the Agora; by the quiet dreamers of the Academy, who resorted to the cool groves of Plato's garden; and by the Nature-loving Peripatetics who with Aristotle sought the study of things as well as of men. It was natural that artists should begin to divide into schools, as did the thinking men of their time; that some should seek to excel in the ideal, others in the natural; and that many should aspire to be teachers of the principles ruling art.

The artist who as a teacher ushered in this age is thus mentioned by Pliny. "Evenor was the father and especially the preceptor of the painter Parrhasius, of which latter artist we shall speak in his own age." We know him, however, not by any of his own works, or any preserved criticism of them; but only as he lived in his pupils.

As the grand light of this age Pliny introduces Apollodorus, alluding casually to the artists of the previous age, placing Evenor among the number as necessarily but incidentally mentioned in an "exposition hastening to the lights of art;" and adding, "among whom first shone resplendent Apollodorus the Athenian in the 93d Olympiad." His great achievement, marking the progress of art, was this; "He first introduced the method of expressing splendor in sky," or chiaroscuro. The improved method by which he attained this end is thus alluded to by Plutarch, "Apollodorus the painter, the first of men to discover the mixture of pigments and gradation of shade." The lexicographer Hesychius mentions Apollodorus as

[1] Book I., Chap. vii. Sect. 4.

excelling in "skiagraphy in opposition to scenography;" skiagraphy or "shadow-painting" being the "contrasted aspect of color," in the aspects of sky and earth, whose shades vary with the changing light; while "scenography," or scenic painting has no sky, and no alternation of light and shade. Though Apollodorus was the first to succeed in chiaroscuro, or skiagraphy, an artist named Taurias, referred to by Athenagoras the Christian apologist, is said to have first discovered the art of skiagraphy when attempting to paint a horse on the disc of the sun; the vividness of the outline of an object held between the eye and the sun, blending gradually though rapidly into and yet in contrast with the darkness of the shaded centre, seeming to have led the artist of that early day to the special triumph in portraiture in modern times achieved by introducing a strong light from the rear of the central object, causing it to stand out with marked vividness. Fuseli has some admirable suggestions as to Apollodorus and his methods. Commenting on Plutarch's statement he says: "He originated local color and tone; not light and shade in themselves considered; but as regulated by the medium which tinges both. . . . This was the element in the ancient *armogē;* that imperceptible transition which without opacity, confusion or hardness, unites local color, demi-tint, shade and reflexes." Two works only of this great painter are specially mentioned; indicating that he like Lionardo da Vinci in later times, was a philosophic artist, never satisfied with his work till it was perfected to his own ideal, and of course executing few paintings. Pliny mentions of him, "His is the priest adoring and Ajax scathed by lightning, which at this day is seen at Pergamus;" and he adds, "not before him is a painting of any artist shown which can rivet the eyes." Another picture of Apollodorus is mentioned by the Scholiast on the Plutus of Aristophanes, whose subject was "the sons and daughters of Hercules and Alcmene interceding with the Athenians when in dread of Eurystheus."

The other leading spirit in this age was Eupompus the great master in *teaching*, and the analyzer and classifier of the schools of his day. In his history of painting Pliny makes the following statement as to him, "Eupompus taught Pamphilus the preceptor of Apelles;" these three artists being leaders in three successive ages. Pliny adds to this: "So great was the authority of this artist that he divided painting into three schools; whereas before him there were two only, called the Grecian and the Asiatic. On his account, he being a native of Sicyon, the Grecian was by popular assent divided, so that three

were established; the Ionic, the Sicyonic and the Attic." The Ionic was of course the same as the old Asiatic; the philosophic spirit of the age of Eupompus, having led to specific instead of general or national names by which to designate different styles in art. It was this Eupompus who taught Lysippus the sculptor, "that nature herself was to be imitated; not any artist." So perfectly absorbed was Eupompus, apparently in his work as a teacher of others that only one work of his is referred to by any ancient author; Pliny merely mentioning as his work, "A victor bearing a palm in a gymnastic contest."

Sect. 5. The Perfecting of Grecian Painting under Zeuxis and Parrhasius, in the age of Grecian Oratory.

Whatever be the decision of the question whether aristocratic or popular goverments are most favorable to the permanent progress of art this fact is manifest in the history of nations; that the age of either the rise or the decline of republican governments calls forth the spirit of sublimest oratory; and this in itself gives stimulus and elevation to the genius devoted to art. The era of the decline of the Grecian republics was the day of her Æschines and Demosthenes; as the era of the decline of the Roman republic was the day of her Cicero. In Greece, especially at Athens, after the popular thirst for philosophic discussion became sated the interest and taste of this impulsive people, constantly involving themselves in political difficulty yet living in a world of highly spiritual thought, turned where their necessity called, and became absorbed in the cultivation of oratory or higher histrionic art. The demands of the times called for practical power in oratory; and hence with men of aspiring genius it became an absorbing pursuit. Though in former ages Greece had such orators as Themistocles and Pericles, now, when by diplomacy and by force Philip of Macedon was seeking to bring all Greece under his sway, Athens alone had such an array of stirring orators, that the stern Philip could select ten whose power with the people was deemed "hostile to his supremacy."

This demand for practical oratory reacted on the old spirit, ever alive in the Greek, of love for the histrionic art proper. The orators of that day and land as of other countries, resorted to rhetoricians and actors of the drama, for training in elocution; and as able professors in the histrionic art were in great demand, they were of course stimulated to increased personal culture. The age of writing the drama is often not the age of superior acting; and Æschylus, Sophocles and

Euripides never saw their own tragedies worthily enacted, as Shakspeare lived long before Garrick. As the great English dramatist is more appreciated two centuries after he wrote, so, two centuries after their dramas immortalized Greece, the orator Lycurgus secured a decree of the Athenian people that authentic copies of the tragedies of Æschylus, Sophocles and Euripides should be deposited in the public archives.[1] As the influence of the dramatic age was felt on the painters of that era so the double stimulus of the age of oratory and of the histrionic art might be expected to lead to an improvement in two respects in painting; first to give added culture to artists, and second to suggest new themes for the pencil and the brush. The inspiring appeal of Demosthenes to the works of art wrought in the times of Pericles, recording the deeds of the heroes of Marathon, roused artists as well as warriors; and the portrait of the orator Lycurgus in the glow of action by Ismenius was a new theme, as inspiring to artists as was Hercules to Dædalus. The varied nationalities of the eminent painters of this age, representing as they did countries far to the north, east and west of Greece proper, is an indication of the wide extent to which genius in art was awakened in this culminating period.

The first representative name among the painters of this age, which corresponds to that of Philip of Macedon, is Pamphilus, the scientific teacher of painting in his day. Art never approaches perfection till thorough science is applied to its details; genius fails unless it finds in scientific study a foundation on which surely and securely to rear its monuments. The age was that of Athens when the theoretical philosophy of Plato was meeting the practical logic of Aristotle of Macedon. Pamphilus himself was a Macedonian, and engaged in teaching art while Aristotle was a youth; and Pliny states that he was "first in the art of painting to be learned in all that liberal art, especially in the science of numbers and of geometric measurements; without which he declared that art could not be perfected." He himself was taught by Eupompus; and in his own works as also in his pupils gave the highest dignity to the profession of the artist. The most eminent painters that ever arose in Greece were his pupils; and the price of tuition which he demanded and received has perhaps never had a parallel in any school of any kind. Pliny says that, "he taught no one for less than a talent," a sum over $1000; "nor for a term less than ten years; which price," adds Pliny, "Apelles and Melanthius gave." Convinced that only a people edu-

[1] Plutarch vi. Orat. x.

cated in art can be expected to give it an appreciative support. Pamphilus secured the introduction of the study of painting in its elementary principles, into common school education; as Eumolpus of Sicyon, nearly two centuries earlier, had succeeded in introducing the study of drawing and moulding. Pliny states that "by his influence the plan was effected, first at Sicyon then in all Greece, that boys of free birth should be taught before all things complete drawing, including painting on box-wood;" a wood selected, as the scholiasts say, on account of its combined lightness and closeness of texture, which allows the color laid upon to soak but little into its veins, and prevents them from spreading in their lines. Pliny adds: "Pamphilus caused that the art should be received into the first rank of liberal arts."

The second great master of this age was Zeuxis. The spread of the spirit of art is indicated by the fact that he was from the town of Heraclea in Magna Græcia, the Grecian province in Italy. His connection as a link to the former age is indicated by Pliny's mention, "After Apollodorus Zeuxis entered the doors of art now open." The high appreciation he received even from rivals is indicated by Pliny's notice, "Upon him Apollodorus made the verses, which he wrote over one of his pictures, 'That art wrested from his own dominion, Zeuxis had appropriated to himself.'" His celebrated works whose fame led to such pleasant episodes in the epic history of ancient painters indicate that he excelled in *still life;* such as fruit, domestic scenes and quiet expression. Pliny relates the following incidents; "Parrhasius is said to have engaged in a contest with Zeuxis; and when the latter had exhibited grapes painted with so great success that the birds, alighted upon the picture, the former exhibited a curtain, painted with such truth, that Zeuxis, inflated with the verdict rendered by the birds, persisted that the curtain should be at length removed and the picture shown; when, learning his error, he yielded the palm with ingenuous modesty, since he had deceived the birds, but Parrhasius the artist himself." Zeuxis is said afterwards to have painted a boy bearing grapes; upon which when a bird alighted, with his peculiar disinterestedness he advanced excited up to his work, and said, "The grapes I painted better than the boy; for if I had done justice to this part of the work the bird ought to have been afraid." The third incident mentioned by Pliny, coupled with the counter criticism of Quinctilian, reveals a new element of excellence in Zeuxis and his method of attaining it. "Although," says Pliny, "he gave undue size to heads and joints, in

other respects so great was his care, that, when about to make a picture for the people of Agrigentum, which they designed to devote to the temple of Juno at Lacinia, he inspected the unmarried girls of their wide region, and selected five, that whatsoever was most admirable in each he might represent in the picture." This hinted defect, in the estimation of Pliny, is spoken of as an excellence by Quinctilian; who says; "Zeuxis gave more fullness to the members of the body; preferring it broader and more close-set; and, as it is thought, he followed Homer in this, to whom the most robust form, even in females was favorite." Artists and art-critics everywhere would differ, as did the ancients, in this peculiar field of individual preference. The extravagant habits of living, attributed to Zeuxis by Pliny, is an indication of the excessive prices, which, at this age of the perfection of painting, the works of a master would command. Pliny relates, "He acquired so great wealth that in ostentatious display of it at the Olympic games he paraded his own name in gold letters on the squares of his mantle. Afterwards he determined to donate his works, because, as he said, they could not be exchanged for any price sufficiently worthy; as his Alcmena to the people of Agrigentum, his Pan to Archelaus." Two efforts of his at excellence are hinted in Pliny's brief expressions, "He made a Penelope in whom he seems to have portrayed the moral virtues; also an athlete." "He painted also *monochromata* in white." The first of these statements indicates that ideals of two characters most opposite were attempted by his genius. The latter, the attempt to give the prominent light of his picture in pure white, is a rare effect studied by able modern artists. His remark to Agatharcus, a brother artist, cited below, is an indication of the perhaps excessive importance which he attached to labor bestowed on the finish of paintings.

The next great master of this age is Parrhasius; whose power in tragic expression has made his productions the theme of impassioned eulogy in his own and other ages. Pliny, who personally studied and admired specimens of his work preserved in his day at Rome, says of him; "Parrhasius established many principles in art." "He first gave symmetry in painting, liveliness of expression, elegance to the hair, grace to the mouth; by the confession of artists having won the palm in terminating lines. This is the highest perfection in painting. For, to paint bodies and the central parts of objects is indeed a great work; but one in which many have attained eminence. To execute the extremities of figures, and to round in the terminal line, is rarely discovered in the success of art. For the

extremity itself ought to enfold itself; and so to terminate that it shall project other parts behind itself, and also show what is concealed. This successful attainment Antigonus and Xenocrates, who wrote upon Paintings, concede to him; frankly commending also, not simply admitting, many other excellencies of his." This rare attainment of so causing the outline of a figure to fade into the shade behind that it seems not to terminate at all, but to be rounding back still into deeper shade behind, and thus to be not a flat outline but a solid projecting body, necessarily precedes the higher attainment of Apelles in the apparent projection before the canvas of a limb foreshortened. Pliny adds, indicating how excellences are often carried to excess; "Nevertheless he seemed to fall below himself in bringing out the central parts of his figures."

Parrhasius became, as Euphranor in sculpture, a master model and authority in painting. Pliny states, "Specimens of his drawings are extant on boards and parchments from which artists are said to derive advantage." Quinctilian mentions, "Parrhasius was so comprehensive in every respect that he may be called the founder of laws; because the images of gods and of heroes as they are handed down from him, other artists, as if by necessity, follow." Besides this mastery in detail, Parrhasius excelled in combination; and was especially a leader in the impassioned style. "He painted," Pliny relates, "an assembly of the Athenians, with a wonderfully skilful device; for he was bound to show varied expressions, the angry man, the unjust, the inconstant, as well as the yielding, the humane, the sympathizing, the high-minded, the conceited, the cringing, the overbearing, the shrinking, and all these expressions equally vivid." "He painted also two boys, in which the security and simplicity of that age is beheld." "Two of his paintings most noted are, an armed man in the contest so exhausted with running that he seems to sweat, and another laying off his armor who seems to pant."

The faults of character shown by Parrhasius, common to men of his genius, are fully stated by Pliny, "He was an artist fruitful in genius; but one than whom no one used his eminence in art with more arrogance. For he appropriated to himself titles; styling himself 'Delicate liver,' declaring himself 'Prince in Art,' and that 'Art was consummated by himself.' Above all, he boasted that he originated from the stock of Apollo; and that the Hercules at Lindus, as painted by him, was as he had often seen him in his sleep." That he had a keen wit under cover of this arrogance is seen in this added statement of Pliny. "In accordance with this spirit, when he

had been by a large vote outdone by Timanthes of Samos in his 'Ajax and the Judgment of the Armed Men,' he said that in the name of Ajax he submitted reluctantly to the idea that the hero should a second time be humiliated by an unworthy man." Like too many men of genius Parrhasius gave way to degrading appetites and unmanly passions; and his example was pernicious. Pliny states "He painted also libidinous scenes on small tablets, recreating himself by lewd sportive pieces of this class." Four centuries afterwards these licentious works were exerting their corrupting influence. Pliny adds, "He painted also Archigalla; which painting Tiberius the Emperor so fell in love with, as Decius Eculeo states, that he bought it for sixty sestertia, and kept it in his bed chamber." Archigalla was a high-priestess of Cybele; and the price paid was over $2,000. Suetonius, the Roman historian mentions, "Tiberius Cæsar when a picture of Parrhasius, in which Atalanta is lustfully embraced by Meleagro, was sent to him with the statement that if he were not pleased with the subject the vender could receive *ten sestertia* for it, he not only chose to keep it, but had it hung up in his bed-chamber." Diseased sensual appetite begets, as the Christian Apostle writing to the Romans showed, inhuman passion in the soul. Marcus Annæus Seneca, father of the moralist, in his judicial Controversies, cites this instance of the voice of humanity drowned by fiend-like craving for fame; "Parrhasius the Athenian painter, when Philip sold the captured Olynthians, bought one old man among them, brought him to Athens, tortured him on the rack, and from him as a model painted Prometheus. The old Olynthian died under the torture; the artist deposited the picture in the temple of Minerva; and he is accused of having thus defamed religion."

The third great master of this age is Euphranor; as unlike to his brother and rival artists of the same age in his peculiar and characteristic excellence as he was in the land of his nativity. He was a native of the Isthmus, a Greek of the Greeks, nursed on the neck of land between Corinth and Athens. His rare excellence was his richness of color; and especially the softness and naturalness of his flesh-colors. The leader of his age in symmetry of form as a sculptor, he added the rarest taste and skill in the admixture of pigments; writing a book on "Symmetry" which became a standard authority among sculptors, and adding one on "Colors" equally authoritative with painters. Referring to his skill in encaustic, which was the richest coloring, Pliny says, "After Pausias far before all others Euphranor the Isthmian was eminent;" Pausias belonging to the age

subsequent to that of Euphranor. His power both as sculptor and painter grew out of the union of these two qualities; he was an artist born and a great worker. Pliny says, "He was quick to learn, and laborious above all rivals in each art." Pliny, Plutarch and others give criticisms on several of his paintings. Of his Theseus, both relate, "He deemed it superior to that of Parrhasius; and he said that of Parrhasius was rose-color, but his own was real flesh." Of his "Cavalry Battle in Mantanea" Plutarch remarks: "The beholder is able as if present to see in the representation the very description of the battle and the struggle, full of force and passion and spirit." In his Twelve Deities Euphranor labored in conception, historians hint, in reaching an idea of Jove akin to that of Lionardo in giving form to his Jesus in the Last Supper. Valerius Maximus says of it: "When Euphranor would paint the Twelve Deities he set forth Neptune in the most transcendent colors of majesty possible; having still to represent Jove yet more august. But every power of thought being exhausted upon the superior work his after efforts were not able to rise to the point which he sought to attain." Eustathius relates of the same: "The historic fact is preserved that Euphranor painting at Athens the Twelve gods, and being in doubt after what archetype he should picture Jove passed by a school, and hearing these words, 'Then ambrosial locks,' etc., he said that now he had the archetype, and going away he painted it." Since the same incident is related of Phidias, it seems to be a striking exhibition of the resort of artists to poets to aid their conceptions. Lucian mentions the portrait of Juno in the same picture as specially marked in the coloring of her hair. All these allusions indicate that Euphranor was master in the art of coloring in his day.

Several other artists of this era had characteristic excellences which in any ordinary age would have given them the post of leaders in art. A single picture of Timanthes, an artist of Sicyon, seems to have called forth rare eulogy in his own and later ages. Cicero, Valerius Maximus, Quinctilian and Pliny all describe it in much the same words. Cicero quotes it in his De Oratore as an illustration, and Quinctilian alludes to it as confirming a rhetorical principle. The scene is that pictured in Euripides, when Agamemnon, who had offended Diana, is told by the soothsayers 'that he must sacrifice his daughter Iphigenia to the goddess, otherwise favorable winds would not be given;' and when Calchas the priest and Ulysses the stern veteran are carrying out the requirement to the grief of the uncle and the anguish of the father. Eustathius thinks that the artist was

directed to the mode of representing Agamemnon's grief by the picture Homer gives of the scene of sorrow at Priam's Court in Troy, when news of the death of Hector came; the sons of the aged monarch bathed in tears at their brother's sad fall, and the hoary king with his face wrapped in his mantle hiding his anguish. Quinctilian's words are, "In elaborating an oration there are things which either ought not to be presented plainly, or cannot on account of their dignity be expressed. Thus Timanthes, when in his Immolation of Iphigenia he had painted Chalcas sad, Ulysses more sad, and had added to Menelaus the highest expression which art could effect, the range of human affections being exhausted, not finding in what worthy manner he could express the countenance of the father, he veiled his head and left each beholder to form his own conception of it." All accounts agree that Timanthes was unrivalled as a suggestive artist; Pliny stating, "In the works of this artist alone there is always understood more than is painted; and, while his art is of the highest order, his genius is always beyond his art." As a specimen of this quality, in addition to his Iphigenia, Pliny cites his "Sleeping Cyclops, a very small picture; in which, seeking thus to express the size of the Cyclops he painted Satyrs measuring his thumb with a canestalk." Aspiring to make one work that should not be allowed to die, "he painted also the Heroes, as the ideal of a most perfect work; in art itself embodying the powers of the art of painting; which work is now in the temple of Peace at Rome."

Yet another eminent painter of this age, representing another state of Greece, was Nicomachus of Thebes; whose characteristic was the ease and rapidity with which he finished his works. Pliny, after stating that Nicomachus must be enumerated among the able painters of his day, and having mentioned several of his finished works, gives the following instance of the celerity of his work: "No one was more rapid in this art. For it is said that when he had contracted with Aristratus the ruler of the Sicyonians that a monument which he was making for the poet Telestes should be painted upon a day fixed, and he had come not much before the time, the monarch being incensed and demanding the forfeit-money, he finished it in a few days with wonderful celerity and skill." Vitruvius who wrote some years before Pliny, seems to have formed a less favorable estimate of Nicomachus as an artist; mentioning him among the list of those "to whom neither industry nor enthusiasm in art nor genius were wanting; but either want of business tact or the inadequacy of their fortune or an excess in ambition to contend for superiority in con-

flicting fields prevented from excelling." Stobæus has recorded a caustic response of Nicomachus which showed he was not lacking in the spirit of a true artist, "It is said that Nicomachus replied to an ignorant man who said that the Helen of Zeuxis did not appear to him beautiful, 'Take my eyes and she would appear a goddess to you.'" Pliny mentions him as having used Eretrian ochre in shading.

Among minor artists of this age several deserve notice. *Agatharcus*, a man of craven spirit and abused by Alcibiades, had a low estimate of labor. Plutarch states, "Agatharcus the painter laying great stress on his rapid and ready execution of figures, Zeuxis hearing him, said, 'I spend much time in my work.'" Another artist of more merit, was *Androcydes;* who excelled in animals, as horses, and succeeded in representing a Sea Deity and fish half hid in the water. Plutarch mentions that Androcydes, having painted a Cavalry Fight in which Epaminondas distinguished himself fighting with the Thebans before Cadmæa, a certain Menecleidas prevailed on him to introduce instead of that of Epaminondas the name of Choron who at a later day routed the Spartans at Platæa; so that afterwards the painting was called "The Cavalry Fight near Platæa;" a circumstance indicating that the historical paintings of the Greeks introduced very little landscape, otherwise such a transfer of scene would have been impossible. Another artist of ability was *Cydias* "whose picture of The Argonauts Hortensius the orator bought for 144 sestertia (more than $5000) and built a gallery for it in his Tusculan villa." Theophrastus' mention of him is: "There is also a vermilion from burned ochre, but not so good, the discovery of Cydias; for he got the idea of it, it is said, when at the burning of an inn he saw the yellow earth half burned and reddened." In the same age *Nicias* decorated the statues of Praxiteles; of whom Pliny says, "This is the Nicias concerning whom Praxiteles spoke, when, being asked which of his own works in marble he most approved, he replied, 'Those to which Nicias has given his touch;' so much did he attribute to his shade-tint." Here also is to be mentioned *Philochares*, supposed to be the artist-brother of the orator Æschines to whom Demosthenes refers; one of whose pictures Pliny mentions as placed by the Roman emperor Augustus some three hundred years later in the Senate House built by him in the Forum; which picture Pliny says was admired chiefly on account of the likeness of a young son, represented in it, to his father now an old man." Demosthenes alludes

derisively to this brother of Æschines as "a decorator of alabaster-boxes and kettle-drums."

This age may be closed with the mention of several teachers of the art of painting whose chief merit seems to have been that they were instructors of artists that became eminent in the next age. Among these are Euxenides, mentioned by Pliny as the instructor of Aristides; Brietes the father and first teacher of Pausias; and Otesidemus the teacher of Autiphilus, who also executed two celebrated paintings, mentioned by Pliny, The Capture of Œchalia, and Laodamia.

Sect. 6. The Culminating Era of Grecian Painting, under its Greatest Masters Apelles and Protogenes, in the age of the Political Unity of Greece under Alexander the Great.

As the age of danger to the Athenian Republic called forth orators, so the era of the complete subjection of all the States of Greece under one head, the son of that Philip against whom the orators of Athens thundered, called out quiet but deep thinkers, among whom Aristotle was chief, on the science of human government. Two causes, that were aside from the natural advance art makes when a new generation may begin where the old left off, were direct aids to this advance. The power of the northern States of Greece, extended southward, brought the fresh and vigorous genius of Macedon into competition with the cultured refinement of Athens, Sicyon and Corinth; the previous age that of Philip had called out most eminent painters from almost every branch of the Greek family; and it is not strange that when not only the civil head was an energetic Macedonian but also the great practical teachers both in science and art, Aristotle and Pamphilus, were of the same nation, that the vigor of the northern mind, refined by southern culture, should bring forth the greatest possible masters in art. Yet again the comprehensive ambition of the young Alexander, not only to be first of all the Grecian race as a military leader, but also as a fosterer of science and art, brought all the immense resources of his accumulated treasures gathered in his Asiatic campaigns to serve as aids to the advance of the quiet artist at home. This ambition had evidently been inspired in the young hero not simply by his teacher, Aristotle the great writer on Philosophy, Natural History, Logic, Rhetoric, Poetry, Ethics and Politics; but also by the aspiration to show himself worthy to have such a city as Athens in all its glory brought under his sway.

A galaxy of illustrious men mentioned together by Pliny as con-

nected with Alexander the Great, masters in four departments of art, set forth the glory of culminating Grecian genius. There was Dinocrates, the Macedonian architect, the builder of the magnificent temple of Diana at Ephesus and the planner of the monarch's new city of Alexandria; Lysippus, the leader in two or three of the most diversified branches of sculpture; Pyrgoteles, the most exquisite engraver on precious stones of that or any age; and finally Apelles, the painter so unrivaled for ages that painting was called "The Apellean Art;" while the centre of this galaxy was not only the greatest of military heroes and monarch of the grandest of empires, but also an appreciative arbiter of the destinies of an age grander in its climactic science, philosophy, literature and art than the world had ever seen. Pliny thus mentions this group: "Dinocrates laid out Alexandria when Alexander was founding it in Egypt; and this same Emperor issued an edict that no other than Apelles should paint himself; none but Pyrgoteles engrave his likeness, and none but Lysippus cast his form in bronze; which arts these men have made illustrious by very many specimens." Plutarch, Valerius Maximus, Horace and Apuleius all echo the praise of this age; the latter giving the artistic statement, "Alexander issued an edict to the whole world, then his own, that no one with temerity should copy the image of the King in bronze, color, or relief; but that often Lysippus, and he alone, should cast it in bronze, Apelles, and he alone, should delineate it in colors, and Pyrgoteles, and he alone, should carve it in relief." It was not surprising that this should be the era of culminating perfection in the art of arts.

The special features of the perfection given to painting in this era are varied in detail, and comprehensive when combined. The *science* of the art, its theoretical principles, were advanced to completeness, in the application of rigid mathematical formulas to dimensions; in the study of nature even in those minute details known only to the common people in their several fields of observation; and in the analysis and synthesis of pigments and vehicles, through which the colorist must accomplish the effects which he has observed or conceived. This scientific study resulted in the most perfect delineation of *forms*, already attained in sculpture; painting now exhibiting true proportion or the just intermeasurement of parts, symmetry or their harmonious conjunction, perspective or the due diminution in size of nearer and more distant figures, and foreshortening or the just taper of retreating portions of figures due to increasing distance. In the higher effects due to *color*, there was a similar perfection; in the gra-

dation of light and shade, by which prominent figures, as in portraits, are made to stand out in relief from their back-ground; in the alternation, as well as gradation of lights and shades, by which portions of the bodies either of animals or men are made to project their entire figures before the canvas; and in the atmospheric tinge produced by distance, including aerial perspective and chiaroscuro, which makes landscape and clouds on the painted wall true to their aspects in nature. In *vehicles* giving richness of hues permanence and polish in pigments, there was a kindred advance; the mellow flesh tints that belong to the grace of chasteness in woman, and the luxurious tints of elegance that deck the captivating contour of the courtesan, being attained by wax pigments and encaustic manipulation; while through improved materials and methods in tempera, the broad and open expanse of frescoed walls was made instinct with reality and life. Most of all *design* in painting, its special field, seems in this age to have reached a worthy maturity; for though landscape painting, as it is known in modern days, was not practiced by the Greek masters, yet in this era the grouping of historical subjects and the composition of mythological scenes was made a chief study; while the power of *expression*, indicating by the features the passions of men and women, and the yet higher power of ideal portrait painting, the making of the correct likeness of a living person yet giving to it any semblance of majesty or enthusiasm desired by the artist, was the acme of art attained by the colorists of this age. As an earnest of this latter climactic attainment, painting began to dispute with sculpture the palm of superiority in the "Beautiful Style;" rivaling its models in form, and compelling the sculptor, as we have seen, to attempt the doubtful expedient of resort to tinted statuary lest he should be outdone by the painter's more comprehensive art. The preferred models of the painter, as of the sculptor, now became youth and woman; youth, because its contour and hue are the everywhere recognized perfection of beauty, to perpetuate which the skill of science and the dreams of poets have been invoked in efforts successful or vain; woman, because, as we have observed, in her the inimitable art of creative skill has embodied and perpetuated this age of climactic loveliness.[1]

The great master of this era, as of all the history of Grecian painting, was *Apelles;* deservedly so called because great in every sense as an artist, thoroughly scientific in principle, laborious and

[1] Book i., ch. vii. sect. 1.

ready to learn from every possible source, and eminent in almost every department of his art. A native of the island of Coos, on the coast of Asia Minor south of Ephesus, he seems to have gone first to that city, then to Sicyon in Greece, as a student of art; while much of his mature life was spent in Macedon in the employ of Alexander the Great. His first instructor was Ephorus the Ephesian; then Pamphilus of Macedon the great teacher of the former age. Melanthius, a fellow-pupil, and Arcesilaus are also mentioned as his instructors; Apelles, like every man complete in his profession being ready to learn from any and every one who could teach him anything in his art.

Two classes of causes conspired to the development and superiority of Apelles; his faithful application of his native powers to the attainment of perfection, without which genius is a disadvantage because it encourages inattention; and the new and independent efforts which his unassuming condescension to all who could teach him enabled him to accumulate and combine. He united studiousness in rules with industry in practice; disinterestedness towards rivals and intelligent deference to popular judgment with firm resistance of servility to wrong opinion even when coming from a king. As specimens of the diligence of Apelles, Pliny states, "He singly transmitted to his successors more improvements in painting than all other artists combined; he also brought together in published volumes what might serve for instruction in its theory." "He had the invariable custom of never spending a day so occupied that he could not practice his art by drawing a line; which habit of his passed into a proverb;" the proverb referred to by Pliny being "Nulla dies sine linea." Commending, yet criticising the excess of labor in Protogenes' method, "he said that all his own works were equal or superior to those of Protogenes, only in this; that he knew when to take his hand from his picture; illustrating the memorable maxim that too great diligence often injures." The disinterestedness and generosity of Apelles to his rivals is illustrated by the following incidents: "He yielded the palm to Melanthius in grouping and to Asclepiodorus in proportion; admiring the latter in symmetry. He first established a reputation for Protogenes at Rhodes;" by the following artifice awakening the people of Rhodes to an appreciation of his rare merit: "Protogenes was humble in his pretensions; especially so in his domestic affairs. Apelles asking 'at how much he valued his works now finished,' and he naming a very paltry sum, Apelles said he should have demanded fifty talents;" or about $45,000. Spreading then the report that he himself had

bought them and would sell them for his own benefit, the circumstance excited the Rhodians to find out the artist; nor would Apelles yield until they went beyond the price named." His mingled condescension and firmness in inviting and yielding to criticism is thus illustrated, "He exposed his works when finished in his shop window to the view of passers by, preferring the criticism of the common people as more accurate than his own. It is related that being censured by a cobbler because in some sandals he had made one stitch more inside than outside, when the same man on the next day, boastful on account of the correction the artist had made on his former suggestion, cavilled about the ankle, Apelles indignant stuck up this notice, 'Let not the cobbler criticize above the sandal;' which also passed into a proverb." This proverb, not preserved in the Greek, is in the Latin of Pliny, "Ne sutor supra crepidam judicaret." "He was characterized also by a courteous affability; on account of which his society was very attractive to Alexander the Great, who often came into his shop. But, when Alexander gave opinions as to many things of which he was ignorant, Apelles courteously advised him to silence; saying, that the boys who ground his paints were laughing at him. So great, of right was his authority towards a king, who besides was irascible in temper; although Alexander gave proof of his esteem for him in a most marked instance. For when he had ordered that one of his concubines, a special favorite of his own, Campaspe by name, should be painted naked by Apelles on account of his admiration of her form, when it became apparent that Apelles had fallen in love with her he gave her to him as a present; great in magnanimity, greater still in command of himself, and not less noble in this act than in any victory."

The special methods of Apelles and his peculiar characteristics as an artist, resulting not more from his native genius than from his studious devotion and fraternizing magnanimity are interwoven into the web of Pliny's extended narrative. "His inventions were of great profit to others devoted to art." One of these, the bringing out and softening of his colors with a minutely thin coating of black pigment, no one succeeded in imitating. His especial attainment in art was grace. "The Greeks call his Venus *Charis*, or Grace." Apelles was remarkable for accuracy in likenesses; and for skill in securing the best views and expressions in portrait. When at Alexandria Ptolemy's juggler, bribed by Apelles' rivals, pretended to Apelles that he was invited to dine with the king. Going to the palace at the dinner hour and learning the deceit, in response to Ptolemy, indignantly

asking as to the offender, Apelles took a coal from the brazier and drew the deceiver's portrait so accurately that the king recognised him. Again, being called to paint King Antigonus, who had lost an eye, "he made the view," says Pliny, "oblique; so that what was wanting in his face seemed rather the necessary lack in the picture." He painted Hercules with his back towards the beholders; in which "this most difficult result was obtained; he showed his face more truly than if it were a front view." One of his horses was entered for a trial-contest; and when he saw the judges at fault, "he showed the pictures of each contestant to horses; when they neighed only at the horse of Apelles." The triumph of Grecian painting realized in him was the attainment of a natural sky under varied aspects. "He painted," writes Pliny, "what cannot be painted, sheet-lightning, chain-lightning and heat-lightning; which the Greeks call *Brontē*, *Astrapē* and *Ceraunobolia*." The inimitable culminating perfection of Greek painting is indicated in two Venuses by him; the first of which having been injured at Rome under Augustus no one was found who could repair it; so that, as Pliny remarks, "the injury itself conspired to the glory of the artist." Another Venus commenced by Apelles, designed to surpass all others, was left at the death of the artist, with only the head and half the breast finished; when no one in after ages appeared who dared to attempt its completion; an incident twice alluded to by Cicero, in his De Officiis and his Epistles, and made the turn of a sweetly sad sentiment.

Apelles as he gained fame showed faults of character, which had rather the charm of virtue; they were frailties so generous and genial. As he became conscious of his power his prices grew exorbitant; but when he used this power to aid a modest brother-artist, like Protogenes, "e'en his failings leaned to virtue's side." The sum of fifty talents, or $45,000, claimed from the Rhodians for their humble artist's paintings, with the threat that they should be carried away if not paid for, is startling to modern ears, if it was not to Greeks. The actually fabulous price of twenty talents, at which, as Pliny mentions, one of Apelles' pictures was sold in later days when there was no artist to repeat them, leads Pliny to state that even during his life, "as the enormous price of a picture he received gold pieces by measure instead of by number."

Some spicy sayings of Apelles preserved by Clement the Christian philosopher and Stobæus the antiquary, reveal in him a playful and genial wit which seems to be an essential element of true genius. Being asked by a brainless critic, "Why he painted the goddess

Fortune sitting," he replied, "Because I did not paint her standing." Having examined a pretentious copy of Helen called the Golden-hued by one of his pupils, he said, "Lad, not being able to make her fair, you have made her rich." To a "wretched dauber," who, showing him a portrait, said, "I painted this in no time," he replied, "Indeed, if you did not say so, I should know it was painted in a very short time. I wonder indeed that in the same time you did not paint more like it."

Next to Apelles in this age of great artists is without doubt to be ranked Protogenes. The two peculiar excellencies in the works of Protogenes seem to have been the exquisite delicateness of his lines and the body he gave to his color, both of which made his labor slow and the number of his finished works few, while however all that he did execute were the rarest and most lasting gems of art.

Born in Caria, north of Rhodes, he grew up in obscurity as a ship-painter; an incident of his early life which he immortalized on the Propylæa of the Parthenon at Athens by working "miniature raking-ships" into the border of his frescoes. He was brought out by Apelles in the manner thus related by Pliny. "What occurred between Protogenes and him is well known. The latter lived at Rhodes; whither, when Apelles had made a voyage, desirous of becoming acquainted with his works, known to him only by report, he immediately sought out his shop. He was absent; but an old woman was taking care of the tablet of a picture of large size fitted to the easel. She replied to him that Protogenes was out; and asked by whom she should say he was sought. 'By this man,' said Apelles; and seizing a brush he drew a line in color of the greatest fineness across the tablet. When Protogenes returned the old woman showed him what had occurred. It is said that the artist, when he had further contemplated the skill it manifested, exclaimed, 'that Apelles had come; that so finished a work belonged to no other;' and that he himself drew another finer line of another color with a brush; and gave orders to his servant woman, that if he returned, she should show it to him, and should add that 'this was the man whom he sought.' And thus it resulted. For Apelles returned; but, reddening with pride that he was surpassed, he drew between the lines one of a third color, leaving no further room for skill. But Protogenes confessing that he was conquered, hastened down to the harbor seeking him as a guest. It was thought worthy that this tablet should be handed down, as it was, to posterity; a wonder indeed to all, but especially to artists. I hear that it was burnt in the palace of Cæsar

having been formerly exhibited in so large a space and containing nothing else than the three lines, escaping observation, as a void amid the illustrious works of many; attractive indeed in itself, and more noble than any work." This statement of the trouble taken by Apelles to seek out an almost unknown artist, coupled with his disingenuous criticisms upon his works, and his generous device while visiting him to make him appreciated among his native Rhodians, as well as the probable influence Apelles had in securing his labor on the porticoes of the Acropolis of Athens, forms one of the most delightful episodes in the history of art; and is a specimen of that genuine friendship which links together men of true genius.

Protogenes loved ideal studies, and could not, like Apelles, descend to lower themes of actual life. Pliny says, "His designs in art were of the highest order, and therefore his fertility as an artist was the less." In the long list of his preserved works there is but one real personage mentioned; a portrait of "the mother of Aristotle the philosopher." Aristotle urged him to attempt a work half-real, half-ideal; "the deeds of Alexander the Great; and that on account of the immortal interest of the events." Pliny adds, "The impulses of his spirit and a peculiar passion for art impelled him the more to these works. Very late in life he had painted Alexander." That this was to be in the style of bronze reliefs of Trajan's conquests on the column bearing his name, and of the modern campaigns of Napoleon on the column at Paris, is evident; because Pliny, who was living in the day when the former was executed, immediately adds to this statement as to Protogenes, "he executed also reliefs in bronze," apparently referring to the design just mentioned. It was certainly a grand idea which the great mind of Aristotle had thus conceived; and no higher testimony to the exalted genius of this modest but enthusiastic artist could be given, than that in such an age, such a mind should have regarded him, even before Apelles, equal to such an ideal representation of the real deeds of the greatest conqueror the world has seen.

Pliny, with his usual sagacity, selects the history of a single work of Protogenes to set forth as in a complete picture the habits, character, genius and laboriousness of the artist; as well as the estimation in which the world held his works. From this incident it would seem, that, having finished his work at Athens, he had returned with matured fame to devote himself in his old studio at Rhodes to the creation of ideal works such as the comprehensive Aristotle had conceived, and his own genius was able both to design and execute. "Of his pictures,"

says Pliny, "his *Ialysus* holds the palm; which is at Rome suspended as a votive offering in the temple of Peace. When he was painting it he is said to have lived on boiled pulse, since this diet would sustain at once hunger and thirst, lest he should dim his perceptions by too great delicacy in food. In this picture he laid on four thicknesses of color as a protection against injury and age; so that the lower coat might succeed when the upper gave way. There is a dog in it wonderfully executed; which, accident, as much as the artist painted. He was coming to the conclusion that he could not represent the foam of the dog panting; when in every other part, what is very difficult of attainment, he had satisfied himself. But in this, art itself displeased him; that foam could not be diminished, when it appeared too abundant and hence to depart farther from the truth; and it seemed to be painted, not to be born from the mouth, despite his torturing anxiety of mind as he sought to make what was in the picture *real* not apparently natural. Often he had wiped off the paint and had changed his brush; by no method gaining his own approval. At last being enraged at art, why he well knew, he struck his sponge on the hated place in the picture; from it he replaced the colors taken off as he had desired; and fortune created nature in the picture." "On account of this Ialysus, lest he should burn the picture, Demetrius the king, when he could take Rhodes from that part alone, did not set it on fire; and he lost the opportunity of victory for the sake of saving a picture. Protogenes was then at his suburban villa within the lines of Demetrius. Nor did he, uninterrupted by the battles, intermit his work at all; until, summoned by the king, he was asked what gave him confidence to pursue his work outside of the walls: when he replied, that he knew that Demetrius warred against the Rhodians, not against the arts. The king disposed his outposts for his protection; rejoicing to preserve that hand on account of whose work he had already spared the city; and lest the artist should be too often called away from his work, he himself, though an enemy, came freely to him; while his ambition for victory was sacrificed, amid arms and the battering of the walls, that he might guard the artist." As this siege of Rhodes occurred twenty years after the death of Alexander, Protogenes must have been quite aged, and as Demetrius was from his persistent and bloody battles against the successors of Alexander styled the "Destroyer of Cities," his attention to the artist and his work is the more striking a testimonial to the superior power of art over arms. Only about ten finished works of Protogenes are mentioned by ancient admirers of art; and

this fact together with the allusions of Quinctilian, Petronius and others confirm Pliny's statement as to the excessive care which he bestowed on his works.

Next after the two great masters of this age must be named Aristides, the younger brother of Nicomachus, whose pupil he became. Living somewhat before Apelles he was in point of time a link between the two ages, yet in point of style to be classed with the latter. His chief power was in expression; in which he excelled Apelles. He seems to have been the first to use encaustic pigments, and the attendant enamelling method, in finer easel paintings. Pliny records, "The equal of Apelles was Aristides the Theban; for he first painted passion, and expressed those emotions of men which the Greek call *ēthe;* a word equivalent to violent affections. He was somewhat coarser than Apelles in his colors." All the works of Aristides mentioned seem to partake of this same character. "His is the picture in which when a city was taken a child is creeping to the breast of its mother dying of a wound, while the mother is understood to perceive it and to fear that it may lap blood, her milk being dried up; which tablet Alexander the Great transferred into his own country to Pella." "He painted also chariot horses running; a man supplicating, almost as with a voice; hunters with their booty; the painter Leontio dying on account of love for a brother; the likeness of an old man with a lyre teaching a boy; and a sick man, beyond measure extolled." Aristides also was associated with Pausanias and Nicophanes as one of the *pornographoi* or painters of courtesans; to whose brazen expression his enamel painting seemed to have been adapted.

The next master in this age was Pausias a fellow-pupil of Apelles under Pamphilus; who perfected the art of enamel painting introduced by Aristides, was eminent in small pieces, attained rare symmetry in the foreshortening of animal forms, and reached peculiar perfection in transparence. He attempted fresco, restoring some paintings of Polygnotus; but as Pliny thinks, he was much surpassed by that earlier artist, since he did not contend in his own art. "He painted also small subjects; especially boys; and, as his rivals said that he chose it because that kind of painting was leisurely done, determined to establish a reputation for rapid execution, he finished a tablet on which a boy was painted in a single day; which was thence named *hēmēresios*, a day's work." His power of contrasting and grouping was thus acquired. "In his youth he was in love with Glycera, his country-woman, a designer of garlands; by imitating

whose work in friendly rivalry, he advanced that art to the employ of a most numerous variety of flowers." His power in foreshortening was seen in a group styled "The Immolation of Oxen;" which hung, Pliny says, "in the porticoes of Pompeii. He indeed first invented this style of painting, which afterwards many imitated but no one equalled; when as the chief thing he wished to show the length of the ox, he painted him with his head, not his side towards the beholder, fully representing his size in both dimensions." His method in light and shade is thus described. "While all painters made of a glistening white the parts which they wish to appear prominent, and finished with black, he made the whole ox of a dark color, and gave body to the shade from itself; thus with great art representing all portions projecting forwards in due proportion and in a bent form as if solid." This description intimates that he introduced the light from behind the object; a method already referred to as practised at an early age in Grecian painting. Pausanias mentions a painting of Pausias, in which is represented wine "flowing from a transparent goblet; and in the picture you can see the goblet of transparent material and the face of a woman through it." The successful representation of colored transparencies is one of the last triumphs of art in coloring. Pliny closes his notice of Pausias with the mention, "He spent his life at Sicyon; and for a long time that was the native land of painting."

Another eminent artist of this age was Nicias; who excelled in shading and projecting figures from the back-ground; but especially in design, both in the choice of themes and in the composition of groups. Pliny's notice presents these two features, "He painted women with the greatest elaborateness, guarded the light and shades, and took especial care that the picture should stand out from the tablet." He excelled in "animal pieces; and to dogs he gave the happiest expression." One of his pictures was visited by Pausanias; whose description embodies the artist's excellences: "There is in it a throne of ivory and a woman young and of beautiful aspect upon the throne; and near her stands a waiting-maid holding a sun-shade. A young man also, not yet bearded, is present, clothed in a tunic, with a purple cloak over his tunic; while a servant near him is holding some javelins, and leading dogs such as hunters use." The teaching of Nicias as to composition has already been quoted.[1]

Among other noted painters of this fruitful age few only can be even

[1] Book ii., chap. v. sect. 3

named. Asclepiodorus who excelled Apelles in symmetry, and Melanthius in composition, have already been alluded to. Echio was his equal in grandeur and Nicophanes in grace. Plutarch mentions that a century after this age Aratus bought for the Museum of Ptolemy Philadelphus, the paintings of Pamphilus and Melanthius. Echio was both a sculptor and painter; eminent in the former art at the time when it had begun to decline. As a painter Pliny styles him master in works classed as "noble;" Cicero illustrating the perfection of dignity attained by the true orator quotes the four painters "Echio, Nicomachus, Protogenes and Apelles" as examples; placing Echio first in the excellence of dignity. Nicophanes is characterized as "elegant and polished so that few could compare with him in grace." Together with Aristides and Pausanias, artists of the same age, he received in later times the designation of *pornographos*, from his skill in giving grace in form and luxurious richness in coloring. Of Athenio, a youthful painter of great genius, Pliny says, "Had he not died in his youth no one would have borne comparison with him;" and he characterizes him as "graver than Nicias in color, and more pleasing by this graveness." Omphalio is the last that can be added; a slave of Nicias, tenderly loved and manumitted by him; who so improved under the tuition of his master, that his productions were deemed worthy to decorate the temple of Messene.

It is worthy of special note that this was the age of writers on art. Apelles must of course in the volumes gathered by him have been the great leader in this department. Melanthius wrote a treatise on painting; of which Pliny made extended use in his history, and a fragment of which has been preserved. Asclepiodorus is also supposed to have been the author of a similar treatise; while Pliny mentions that Perseus wrote a work on art which he dedicated to Apelles.

Sect. 7. The Declining Period of Grecian Painting in the Decline of Greek Political Supremacy and of Greek Culture.

There is a power in genius and natural refinement of spirit to make itself felt, even upon an uncultured people and on rulers that do not appreciate art; and this fact was illustrated in the spread of the spirit of Athenian culture, of Sicyonic skill and of Corinthian grace westward into Italy, southward into Laconia, eastward into Asia Minor, and finally northward into Macedonia, during the early, maturer and culminating progress of Grecian Painting. When, however, the cultured people have been a powerful nation possessing

forcible political supremacy, there has existed naturally a counteracting tendency which even leads to the decay of art. The Greek people had under Alexander become the ruling nation of the earth. While they held that sway their culture gave its tinge to art in northern Africa and western Asia. As soon as that power declined, the prejudice, living through generations, against a powerful and sometimes oppressive master now reduced and impotent, ripened into a distaste even for the culture which had formed their peculiar greatness. The history of the world, replete with illustrations of this tendency, has presented none perhaps more striking than that of the decline of the political supremacy of the Greeks under the selfish and contending successors of Alexander. Some of them, as the Ptolemies of Egypt, preserved for generations the love of culture belonging to the true Greek; but lost more and more the power to make the people whom they ruled yield willing allegiance to the sway of that culture. The history of Grecian Painting, beginning with the death of Alexander and the division of his empire among the numerous aspirants to succession, presents a checkered but steadily declining phase; like the fading glories of a sunset sky, streaked for a moment with scattered lines of rarest beauty; while, however, the gray is fast consuming the gold, and the gloom is every moment deepening.

The state of philosophic opinion, especially the predominant school of the times, had much to do on the one hand with depressing, and on the other hand with keeping alive the spirit of art in the department of painting. The philosophy of Epicurus, in its gross sensualism and avowed antagonism, not only to the idealism of Plato, but to the practical science and ethics taught by Aristotle, was directly arrayed against the spirit of true art. Epicurus, who was born B. C. 342, was a youth of eighteen years at the age of Alexander; he lived to be seventy-two years of age, dying B. C. 270; and the influence of his philosophy gave shape and tone to a large class of minds in the age of Alexander's successors. A check upon this adversary to the old Greek culture was given by the Eclectic schools; whose influence kept alive and fresh the spirit of Plato for centuries. Prominent among these were the schools of Athens, at which Cicero educated his son Marcus; of Pergamos in Mysia famous for its immense library of 200,000 volumes and as giving to parchment the name "Charta Pergamena;" Tarsus in Cilicia where Paul, afterwards the great apostle of the Christian faith to the Greeks, was educated in his youth; and Alexandria in Egypt, the centre where

Greek genius in every department clustered, and found for centuries after Alexander's time, and even after Christ's day, a congenial home. Yet another cause contributing to keep alive the Greek spirit of art was the appreciation it met from their early Roman conquerors under the Roman Republic, and from the Emperors in succeeding ages; who not only transported to Rome works of ancient art, but invited Grecian artists as their teachers.

The characteristic features indicating the spirit of decline in this age are mainly seen in these two extremes; the tendency to the patronage of works of unbridled and irrational fancy called by the Greeks *phantasy;* and the devotion of the noble art of coloring to mean objects, especially to the purpose of mere decoration. In tracing the history of this period, the first stage of decline is seen to begin with the abuse of the imagination; then the revival of a purer taste succeeds under the fostering influence of the Ptolemies; yet later a second impulse is given to painting by Roman fondness for decoration, an era commencing at the time of the Roman conquest of Macedon. In filling up this outline, aided by the apparent hint suggested in the order of Pliny's record, many artists should probably be introduced, whose nation and age are not determined by historic records; and also a list of females who attained eminence in painting, the art which alone seems to invite woman's genius. The former list naturally falls into this period, since in the ages of the great masters names subordinate are usually clustered with those better known, and are thus fixed in their place by association; while those that are mentioned as isolated, yet of inferior merit, seem to have flourished in the age when there were no masters with whom they could be compared, that is in the age of the decline of art. Here probably, too, should be placed, as Pliny has placed them, the names of females devoted to painting; since though some of these lived in the better days of art, most of them seem to have lived during its decline; while, moreover, it is in ages when art has too little dignity as a manly employ, that it still remains and thus becomes especially the field for womanly culture.

In passing from the age of climactic excellence, to that of decline, a few names seem to be links to the past. Among these are Philoxenus a pupil of Nicomachus, Ctesilochus a pupil of Apelles, and Praxiteles a namesake of the great sculptor. Of Philoxenus Pliny records, "He painted 'Lasciviousness,' in which three Satyrs were revelling. This artist, following the rapid method of his instructor, added some even briefer and superficial methods." Both the

degenerate themes and the superficial methods of this artist mark a decline in the art. Yet more degenerate is the disciple of Apelles; of whom Pliny says, "Ctesilochus a pupil of Apelles is noted for his wanton style of painting; illustrated in his Jove pictured in a night-cap, and groaning like a woman, while the goddesses are acting as midwives to him."

While the artists just mentioned mark the transition to the age of decline, among those living in it are Theon, Diogenes, Artemon and Clesides. Of *Theon* Pliny mentions two works, and Ælian a third; all indicating the same characteristic in the spirit of the artist; the Rage of Orestes murdering his adulterous mother; Thamyris, the self-confident Thracian musician who challenged the muses themselves to vie with him upon the harp; and an armed soldier hurrying to aid another attacked in battle. Both Quinctilian and Ælian quote Theon as one eminent for what the Greeks called *phantasies;* that is overdrawn and fanciful representation of passion conceived for mere effect. Quinctilian indicates the age of Theon as that just after Apelles and Alexander. Of *Clesides* we are told by Pliny, "Clesides was noted for his injurious act towards Queen Stratonice. For when no honor had been denied to him by her, he painted her wantoning with a fisherman, of whom it was the report that the queen was fond. This picture he publicly exposed in the port of Ephesus, while he took himself off by ship. The queen forbid that the picture be removed; although the likeness of both was wonderfully striking." The works of all this degenerate period belong to the class of overwrought passion or of sensual appetite, both the legitimate offspring of the prevalent philosophy.

A new era seems to have dawned when Ptolemy Philadelphus was enriching the Museum of Alexandria with collections of literature and art, and the poet Aratus, a man of broad and refined general culture, was acting as his agent in gathering up in Greece the works of the best masters. The names of Nealces, Erigonus, Pasias, Leontiscus, and the second Timanthes adorn this era. Nealces is mentioned by Plutarch as a special and beloved friend of Aratus, who with difficulty overcame the modest reluctance of the artist to undertake the task of restoring injured pictures of the old masters bought by him for Ptolemy's Museum. Pliny mentions, speaking of Protogenes, fortunate with his sponge, "Similar success is said to have followed Nealces in the foam of a horse; his sponge being struck on the canvas, when he would paint a groom holding back a horse." His rare invention is celebrated in his picture of "A Naval Battle of

the Egyptians and Persians on the Nile, whose water is like to a sea," in which, "he showed by a device what he could not by art. For he painted a little donkey drinking on the shore and a crocodile lying in wait for it." The end sought seems to have been, not only to mark the land pictured by tracing the animals peculiar to it, but also to give the idea of the distance in the back-ground, over the broad river, by the comparative size of the donkey on the shore. Another instance of the powers of early employ is given in the artist thus mentioned by Pliny. "Erigonus a grinder of colors for Nealces the painter, himself made such proficiency that he left also a celebrated pupil." Leontiscus and Timanthes, were both noted for paintings commemorating the victories of Aratus; noted as the successful general of Ptolemy, as well as a philosophic poet, and the special patron of art. The fact that the entire circle of artists distinguished in this age seem to cluster around one great patron, Ptolemy with his art collector, is a striking confirmation of the general principles manifest in this and other ages that the development of genius in art depends much on the patronage it receives.

Nearly a century of decline seems to have succeeded to the age of Aratus and of Ptolemy Philadelphus; when a momentary rekindling of the art-spirit, the sudden flicker and flare that is precursor of a lamp's final going out, is seen at the era of the Roman conquest about B. C. 168. The noble leader of the Roman army in that conquest was Paulus Æmilius; who, while he enriched his country with the treasures of art, which, having accomplished all they could to redeem the land of their authors, were now to be teachers of another great nation, appropriated to himself nothing but the library of the usurper Perseus whom he overthrew; but was ambitious that the spirit of Grecian art, still exerting its power in the works of deceased and of living artists, should become the public treasure and renovator of the Roman people. The two lights of this age were Heraclides and Metrodorus; the latter of whom Pliny styles, "a painter and a philosopher also; a man of such great authority in each science, that when Lucius Paulus, having conquered Perseus, desired from the Athenians to send to him a most approved philosopher to educate boys, and also a painter to furnish decorations for his triumph, the Athenians chose Metrodorus; the same man being most eminent in each of the desired qualifications which Paulus had indicated." The decline of painting in fresco under Augustus is indicated by this exclamation of Vitruvius, "Let us see to it that the scenic style of Apaturius do not make us Alabandeans and Abderites. . .

O that the immortal gods would cause that Licinius should return to life; and correct this foolish system, and these erroneous principles of frescoing." From the character of the people of Alabanda, as described by Strabo, and hinted by Cicero and Juvenal, and of Abdera, we may conceive the style of Apaturius to have been a mixture of the stupid and the libidinous. The student of the frescoed walls of Pompeii, now unburied, finds abundant illustration of this criticism of Vitruvius.

The last in the line of the Greek painters, before the succession is lost in another age, is Teinomachus, who was a Byzantine employed by Julius Cæsar at Rome; whose Ajax and Medea was his most noted work. Pliny, however, crowds into the close of his brief history the names of several artists, some of whom may have lived in early ages, but whom he saw fit to group as representatives of the last or declining stages; his remark about them being, "Up to this point the chief leaders in each kind of the art having been presented, those next to the first will not be passed over in silence." He closes his history with the mention, "Women also painted;" and adds these names. "*Timarete* the daughter of Micon painted Diana on a tablet which is a specimen of most ancient painting at Ephesus; *Irene*, a daughter and pupil of the painter Cratinus painted the damsel who is an Eleusinian priestess; *Calypso* painted Theodorus as an old man and a juggler; *Alcisthene* a dancer; *Aristarete*, a daughter and pupil of Nearchus, painted Æsculapius." Of these we observe that nearly all are daughters of painters, who from their fathers caught their devotion to art; their themes are generally ideal, and moreover belonging to religious idealism; and they attained a grade of eminence which led Pliny to place them among painters of the third or lower rank. To these five mentioned by Pliny must be added Helena alluded to by Photius, and Alexandrina by an annotator on Clement of Alexandria. Helena, a daughter of Timon, an Egyptian, or a Greek born in Egypt when a Grecian kingdom, prompted by the spirit of Egyptian as well as Grecian art, painted a picture of the Issican War, which occurred in her day; which painting was placed by Vespasian in the Temple of Peace. Alexandrina was the daughter and pupil of Nealces the Grecian painter just alluded to; and in this declining age she excelled as an artist. Pliny adds the name, and extols the works of a Roman female painter; a notice of whom belongs to the subsequent history.

CHAPTER VI.

ROMAN AND MEDIÆVAL PAINTING; CHARACTERIZED BY ARTIFICIAL COLOR AS AN ADJUNCT AND ORNAMENT OF ARCHITECTURAL FORMS.

As we have seen, the Romans as a people were devoted to architecture as the first of arts; to which the others were made subordinate. Pliny introduces his history of painting, by three or four paragraphs relating to Roman appreciation and employ of this art; while the body of his work relates to Grecian painting. Those allusions indicate that painting among the Romans was truly a mere adjunct of architecture. Walls and ceilings were adorned, with fresco on plaster, and with encaustic enamelling on wood; and to so great an extent was the decoration of buildings carried that Pliny says, "we begin even to paint stone." Another peculiar employ from the earliest ages of native skill in this art among the Roman people was the execution on the door-posts of private houses of the portraits of deceased ancestors; the painted images taking the place of the statuary of marble and bronze preferred by Grecian taste. The idea of architectural decoration was the leading principle in even this portrait painting of the early Roman times; executed as they were, not on canvas to be hung on the walls within; but painted on the wood, or stucco work of the door-way at the entry.

From the earliest period of the history of Rome Grecian painters were employed, as we have seen, especially as wall painters. It constituted a new era when by the conquest of Greece the treasures of cabinet paintings of the great Grecian masters began to be appropriated in the Roman capital. Pliny's memoir is studded with the frequent mention that such a painting, executed by Zeuxis or Parrhasius, by Apelles or Protogenes, or even earlier authors, were in this or that temple at Rome; some of them being named as burned in the destruction of the edifices in which they were deposited. At the period when these accumulations had reached their maximum, we read of efforts made to gather them into general collections, where as common property they might be of service to the republic.

While there were Greek artists who supplied to a great extent the Roman demand for painting, the collection of the works of genius of earlier ages in Greece awoke in a few Roman minds an ambition to rival these works of the Greek masters. Some of these Cicero found

occasion to commend; but in general their genius produced only works of an inferior cast. While Pliny, however, was writing, a new spirit was coming over thousands of the Roman people; a quiet leaven beginning its influence in the insignificant Christian gatherings which Trajan directed this literary favorite of his, raised to the office of provincial governor, to watch as novelties, and to report to him their character; a convincing wisdom which in less than a century won the acceptance of Greek intellect, and a subduing power which in three centuries compelled the allegiance of Roman Emperors. When Christianity thus gained the seat of power, as Roman civil dominion had been pervasive and all controlling, so the succeeding ecclesiastical sway, having its two centres at Rome and Constantinople, assumed a kindred control; to which science and literature, art and philosophy were obliged to bow and conform themselves. The features which mark eras in the history of painting among the Romans will be found to take their character from the principles thus successively developed.

Sect. 1. Collection of Greek Paintings and Employ of Greek Painters at Rome.

We have found Grecian painters engaged at Rome in the decoration of the Capitol of this people, then rude, at a time when painting had not even in Greece reached an excellence which justified its recognition as a sister art with sculpture and architecture. Scattered through the succeeding history of the rising city an occasional mention of Greek painters is met; though no name of special note occurs. Even during the period of Rome's decline Grecian painters are found lingering in the imperial city whose influence aided in arresting its decline. One of the best of these was Eumælus; and the last to receive special renown was Hilarius who flourished about A. D. 364. Painting, however, was not an art cultivated in Rome at an early period; the chief exception being the filial act of adorning the atrium with ancestral images; which, as Pliny intimates, were rudely executed and by native artists.

The Romans, however, were eminently collectors of cabinet or easel paintings; a disposition showing itself especially at the period of the conquest of Greece. About B. C. 167 Æmilius conquered Macedon, the north of Greece, then enriched through Alexander's influence with some of the best works of the ablest Greek painters. These moveable works of Greek art, transmitted to Rome, only whetted the appetite for a more extensive plunder about B. C. 147.

Mummius, the Roman general, after having subdued Achaia, or southern Greece, opened a treasure-house whence inexhaustible stores not only of statues but also of paintings were borne off. The numerous philosophic criticisms of Cicero upon these collections of art, interspersing his varied writings, indicate the extent to which a taste for painting had become cultured among the intelligent Romans.

The great number of paintings, brought in the latter days of the Republic, and during the reign of Augustus, to Rome, seems to have suggested the idea of gathering them in public repositories such as Libraries and picture-galleries. Alluding to this era Pliny beautifully remarks that "in libraries are reverentially preserved either in statues of gold, silver or brass, not only true likenesses of the men whose immortal spirits are still speaking in the same places; but even those which are not in existence are put into imaginary form; and human desire produces portraits not historically preserved, as happens in the case of Homer." He mentions Pollio, a consul under Augustus, as the first to establish a public library thus enriched; adding, "he made the intellectual endowments of men a public treasure." It is related also of the noble Agrippa, who as his intimate friend advised Augustus to re-establish the Republic instead of consenting to become Emperor, that he refused to accept a triumph after his great victories in Gaul and Germany, choosing rather to devote the rich spoils gathered in his campaigns to the enriching of the city with improvements of the public buildings; among which the magnificent portico of the Pantheon, still so admired was one. In a speech uttered soon after the fall of the Republic, he recommended to his countrymen "that the works of art they had gathered should be devoted to public use; and that to this end they should be placed in public repositories for the improvement of those who devoted themselves to the pursuit of art, as also for the pleasure and admiration of all." Thus devoted to collections of art, the Romans were satisfied that the Greeks, who furnished them with paintings, should also provide them with painters. As we shall see, even down to the time when the religion of Christ in the person of Constantine had gained civil sway in the empire, Greek artists were the leaders of taste in painting.

Sect. 2. Native Roman Painters and their productions.

It is natural that a historian should seek to exalt his own country, while not doing injustice to a foreign people; a fact which seems to be illustrated in the effort of Pliny to give a prominent place in his

history to the native painters of Rome. After mentioning that Cleophantes, the Corinthian painter, driven by civil oppression fled to Rome in the days of Tarquinius Priscus, he adds, "painting was already an art advanced in Italy." "There are in existence, in the sacred structures of Ardea," one of the oldest cities of Italy, "paintings that are more ancient than the City of Rome." "Among the Romans honor at an early period attached to this art." The early and rude creations of this art, seem to have been of two classes; the adorned niches and borders around the effigies of ancestry placed in the entrance of private houses and the decoration of shields with varied devices. In other nations a "decline" had led to the "loss of the arts;" "because as there were no images of souls, those of bodies were neglected. On the other hand, among our ancestors in the door-ways might be seen not the works of foreign artists, either in bronze or marble; but busts moulded in wax were disposed each in its niche;" pride in which served to keep up the family spirit. "Curved borders," he adds, "were drawn around these images and painted portraits were interspersed;" these images with their colored borders keeping alive the native devotion to painting for generations.

Another favorite subject of ancient painting among the Romans, the more so because both their shape and the images painted on them gave the idea of framed cabinet pictures, were decorated shields. Such shields were common in the time of the Trojan War; some having images embossed or carved on their fronts, whence came the Latin name derived from the Greek *clypeus* from *glypheos*. It became an honor to have the features of the bearer of the shield pictured on his buckler. This was a custom of the Carthaginians descended from the Trojans; some of whose shields, captured from the army of Hasdrubal, were preserved at Rome. These decorations, which naturally suggested the oval form for a class of cabinet paintings, were another department of the art of coloring by which Roman genius was called out.

At a very early period, probably during the era of the renowned painters of Greece, the name and office of painter was made honorable by the devotion to its practice of the noble family of the Fabii; illustrious for generations under the title "Pictores" or Painters. Pliny mentions that the chief of this illustrious family, in the year U. C. 450, or about B. C. 300, decorated with paintings the temple of Safety at Rome; and he adds that those paintings existed to his day; though the temple was burned under the reign of Claudius. Several names of Roman painters occur in Pliny's history, some of

which are interspersed with those of Grecian artists. After the Fabian family had ceased to furnish able artists the art passed into hands less worthy. To this era probably belonged Arellius, mentioned by Pliny as a corrupter of the art. The mention of Pamphilus as a Roman painter living in Cicero's day is a link in the line of descent; the artist, however, having more note from his name apparently than for any great merit.

The mention of a *mute*, in the next age, as an artist is important as bearing on a suggestion of modern days as to the instruction of deaf-mutes. Pliny's mention is: "Quintus Pedius, nephew of Quintus Pedius a man of consular rank and honored with a triumph, was favored to receive the patronage of Cæsar Augustus when dictator. Since he was by birth a mute, Messala the orator thought that he should be taught painting; and this the Emperor Augustus approved. The boy, having greatly advanced in this art, died."

Under Nero flourished three painters of native birth; Fabullus, a decorator of houses; Dorotheus, who aspired to imitate Apelles; and Priscus. Under Vespasian Pinus gained note; and probably Mallius noted for his scurrility, as well as ability as an artist. Pliny especially extols Turpilius; whom he styles, "a Roman knight of our age," a native of "Venice," whose "beautiful works are to this day extant at Verona. He painted with his left hand; which is related of no one before him." While thus as native Romans Pliny naturally sought to bring into all prominence possible the artists of his own country he lays chief stress on the "authority" in this art, which had centred in Rome because of her collections of "foreign cabinet-paintings." It is by this transition that he passes to his full and most valuable history of Grecian Painting.

Sect. 3. Roman Taste in Painting characterizing early Christian Art.

It was not unnatural that the spirit of domination planted by the Creator in the Roman mind, bestowed for a higher than earthly end, should live even after the new spirit infused by Christianity had taken control of this people, prepared to exert a wide influence on their own day and to leave the seeds of a great transformation in nations yet to grow upon the decay of their power. The leading and controlling heads of the Roman Christian Church, early firmly established, retained and transmitted for generations the spirit of their ancestry; and the ecclesiastical power of Rome gave to taste in art the same direction which the Roman civil power had inspired.

There are two sources whence a knowledge of the characteristics of early Christian art may be gathered; first the relics of painting in this age preserved at Rome and elsewhere in Europe; and second, the writings of Christian fathers who allude to the paintings and artists of their times. A careful survey of these two sources enables us to trace, though obscurely, the steps in the progress of painting in this era generally regarded as barren of interest to the student of art.

In the age referred to the spirit of true art lingered in the descendants of old Greek artists; many of them became eminent as painters; and the critical allusions made by intelligent Christian writers of the time to these men of their own day, as well as to the earlier Greek painters, enable us to judge how art in its secular relations was regarded by men of thought among the early Christians. Among Greek painters prominent in this age were the following, Artemidorus, who lived about A. D. 100, became eminent in classic themes; though Martial, the Latin poet criticises a Venus painted by him because it had the masculine attributes of Minerva. A half century later, A. D. 150, flourished Aristodemus of Caria, who wrote a treatise on "Eminent Painters, the cities in which the Art of Painting was most cultivated, and the kings who had patronized the art;" and also Eumelus celebrated for the soft grace he gave to his works, which was specially remarked in a Helen painted by him for the Roman Forum. A century after, about A. D. 250, Hermogenes is mentioned as an able painter. Finally Hilarius who flourished a century later, about A. D. 365, attained great eminence at Athens as a painter; but was, when young, killed in an attack of barbarians. To these painters of the early ages Greek critics and Christian Fathers make like allusions; showing how much in common were the views as to art of learned Christian writers and Greek scholars of the same day. Thus Tertullian, the able Christian scholar of the third century, in a written controversy as to the principles of the Stoic philosophy, with Hermogenes a Greek poet and artist, is not only most courteous in the general argument but also highly complimentary to the ability of the artist. It is manifest that paintings on secular subjects were not held either in abhorrence, or even in disesteem by the Christians of the early ages after the apostles. We should be prepared to find the same substantially true of the estimate in which early paintings upon Christian themes were held.

Able writers upon early Christian painting have noted different eras marking the progress of its development. Kugler, borrowing

his designation from the architecture of this period styles the painting of this age "Romanesque:" a designation more appropriate, as in the history of architecture, to a later stage of art in Christian Rome; since both the architecture and painting of the very earliest ages was simple in style, though modeled after the Roman; while the Romanesque proper may with more propriety be confined to the era when the Byzantine, becoming a rival, gave two distinct casts to these arts, requiring separate designations drawn from the two cities where the opposed styles prevailed. Mrs. Jameson, followed by Lady Eastlake, distinguishes between paintings on Christian themes designed to present *supernatural* scenes, and adapted to inspire religious awe and veneration, and those founded upon *natural* scenes in the life of Christ and his apostles, designed to instruct the mind rather than to impress the sensibilities. Jarves, the American critic on art, makes prominent the age of *theological* as distinguished from *historical* themes; the age of the former being the era when symbols and ideals of the supernatural were demanded of the artist by the spirit of the Christian world, and the age of the latter when the models for Scripture themes could be chosen from among living men.

Perhaps the progress of taste, especially of design, in the history of Art in Italy may be most profitably reviewed in four aspects; which to a certain extent correspond to as many stages of development; while, however, it should be remembered that works of each of the classes mentioned were produced in each age; the leading characteristic of succeeding ages being only the predominance of the types here mentioned in their order. The first age was *symbolic;* simple attempts by painted signs to represent ideas, and by instruments to depict an office; to which simple style of conception and execution Christian artists seem for three or four centuries to have devoted themselves. The second may be called the *mystical* age or style; the representation not of instruments but of beings supernatural either in origin or in endowment. This style culminated in the Byzantine Church, and became its fixed type to this day; ruling also in the Western Church with occasional intervals during eight or nine centuries, till the revival in Italian Painting. The third may be styled the *ascetic;* the representation of natural personages in positions and with features that are found among real men, but men in an unnatural state of dejection. Originating in Italy, where it held sway till the age of the three great masters, numbering even the youthful Raphael among its later votaries, it found its congenial and permanent home among the Spanish Painters. The final stage of the

progress of art in painting Christian themes may be styled the *historical*, that of Scripture history proper; in which the cheerful, almost romantic incidents in the lives of the patriarchs and of Jesus are made the theme of a purely natural representation; an era commencing with the great masters of Italy, not finding, however, in that land, its native clime, but becoming the very life of Christian art in Western and Central Europe. It is only the earlier stages of this history that come directly within the field of Roman Painting.

Kugler makes the earliest period of Christian painting to extend over about five centuries: ending with the invasion of Rome by the Lombards in the sixth century. He classifies the subjects and objects of the rude coloring of this period into five divisions or groups; *first*, emblems proper, such as the cross, the anchor, etc.; *second*, funeral inscriptions and symbols; *third*, paintings of Christ's features or form; *fourth*, miniatures of eminent Christian men such as apostles and martyrs; *fifth*, mosaics, which were a revival of Roman taste for tesselated pavements, a taste awakened apparently in the fourth century, and which took the form of decorated walls instead of pavements, the mosaics of Christian times being imitation of wall, cabinet and miniature painting. The divisions indicated are made on diverse grounds; the first relating to objects colored; the second to the location and use of the painting designed; the third to subjects represented; the fourth to the size of the works executed; and the fifth to material employed. The consideration of the first and last of these groups belongs to the subject of Decorative Art. The second third and fourth are the painting proper of this age; which rude as it may seem, had the characteristics of true art, having its stages of rise, of culmination, and of decline when after the Lombard invasion art seemed for two or three centuries to find no votary worthy of its high mission.

The paintings of the Catacombs of Rome, which were the burial places of the early Christians, and as such decorated with devices and subjects appropriate, are, like the tombs of Egypt, a permanent gallery for the preservation and exhibition of early works in painting. They are visited by every passing tourist with intense interest; they have been the study of artists and of art-critics for ages that their style and sentiment may be appreciated; while also men of piety, of learning and of true culture have penned volumes of criticism upon them, sometimes influenced by questions of theological opinion which have no direct relation to art. The catacombs, like the tombs of Egypt, are excavations in the porous

rock on which Rome stands. Those used as ancient burial-places are about sixty in number, extending out on almost every road leading from the city; but the most interesting in the history of Christian painting are those on the old Appian Way, or southern road. In one, named St. Agnese, is a chapel on whose stuccoed walls are frescoes of Moses removing his sandals at the foot of Sinai and again striking the rock; The Good Shepherd, with Daniel among the lions on one side and the three Hebrews in the fiery furnace on the other side. In another gallery are paintings of the Ascension of Elijah, of Noah sending the dove from the ark, a woman pleading probably for the restoration of her dead child, and the raising of Lazarus; these latter seeming to relate to the resurrection, as the former to represent the Christian's trials on earth. At the entrance of a tomb opposite is a picture of Christ surrounded by six of his apostles; while the ceiling, divided into compartments, has the Good Shepherd in the centre and surrounded by clusters of fruit and flowers, in outer compartments, Adam and Eve in Eden, Moses striking the rock, Jonah under his arbor, and a female with uplifted hand apparently exulting in praise; the whole seeming to set forth the "rest of the people of God." In other tombs such subjects as these are found; Adam with the serpent, Elijah ascending in a chariot to heaven with an angel form like Mercury at his horses' heads, and a figure of Orpheus as a symbol of the power of God's word over barbarous tribes.

Kugler gives the following description of a head of Christ to illustrate the character of the artistic execution of these paintings; 'the face oval, the nose straight, the eyebrows arched, the forehead high and smooth, the hair parted on the forehead and hanging in long curls on the shoulders, the beard thin, short and divided, the expression mild and serious, the age between thirty and forty years.' To illustrate the simplicity and purity of conception characterizing these early paintings, Mrs. Jameson says, "they touched the traditions of the Old Testament with a delicacy and a reverence that was afterwards lost. They represented the Bible narrative by conventional signs and symbols; they abstained religiously from representing the Divine Being at all, save by the shadow of his glory or the finger of his power." A specimen of this simplicity is seen in the omission of the circles of light, or *nimbi*, about the heads of even apostles; which, in later days, any saint, of however doubtful claim to excellence, was permitted to wear. The character of the themes of this early day indicate the true comprehensiveness and culture belonging to the spirit of Christianity; the representation of historic scenes of

the Old as well as of the New Testament with the naturalness belonging to true life, and the borrowing even from classic art such models for ideals as Mercury and Orpheus. The style of execution, if not comparable in anatomical proportions, symmetry and life to the advanced art of modern times, is certainly superior to the art of most nations and people at so early a stage of their development.

In addition to these witnesses to the eye of the character of early Christian art, the numerous statements of early Christian writers as to the esteem in which painting as an art was held by the intelligent of their number is worthy of special regard. The testimonies of men who wrote in defence of Christianity during the first three or four centuries after the Christian era is in this respect of great value. At an early period a tradition prevailed, not likely to have originated except in a fact, that Luke was a painter. The physicians of that day were often artists, both professions leading to the study of chemical admixtures; and there is nothing to oppose, but much to confirm the idea that Luke, a Greek native of Antioch founded by one of the successors of Alexander, had imbibed a taste for Grecian art. At a very early period pictures of Christ were found in the hands of lovers of art, as well as of Christian believers; as Irenæus, who lived as near to Christ's apostles as we do to Washington, attests. At first these representations, corresponding with the sad history of the Christian Church, embodied the image of the "Man of Sorrows;" as Origen, Clement of Alexandria and Tertullian in the next generation intimate. When, however, under Constantine, Christians were the happy instead of the unfortunate of earth, then artists made Jesus the reflex of their own changed aspect, painting him as "the one altogether lovely;" as Jerome and Eusebius state. A generation later so intelligent and devout a man as Augustine, alluding to the pictures of Christ then multiplied as "varied in expression and composed after innumerable conceptions," argues that all these are legitimate and true, since they give the ideal best suited to aid the mind of each student of his character. In the early days of the church no thought is hinted that pictures of Christ, in ideal representations, were anything else than contributions of art to general culture, and an aid to the study of Christian truth.

When to be a Christian was to pay respect to the religious profession of the sovereign and of men by thousands who had been trained to believe in and to worship images as true representatives of beings having superhuman power, it was natural that the multitudes who nominally avowed themselves as Christians should regard the paint-

ings, then frequent in churches, with a different eye from that with which men beheld them who had embraced the spiritual faith from intellectual conviction of its truth. The fact that the churches at this era were filled with paintings liable thus to abuse is the strongest possible testimony as to the purity, as well as to the extent of the culture of this art among Christians prior to the age when danger of the perversion of the art was possible.

SECT. 4TH. THE BYZANTINE STYLE OF PAINTING; RIGID IN OUTLINE AND EXCESSIVE IN COLORING; PERMANENTLY ESTABLISHED IN THE EASTERN CHURCH.

When Constantine as head of the Roman Empire embraced a religious faith whose authoritative records came from the East and were given to the world through an Asiatic people, and when this monarch through preference transferred the Seat of Empire to a spot bordering on the early seat of Asiatic civilization, it was natural that even a truly European people should take on some characteristics of the new land of their adoption. Yet more, the Roman boasted of his origin from that portion of the Japhetic stock which had its original home in Asia; Æneas their great ancestor having been a Trojan exile. Even at Rome itself in its earliest history Asiatic ideas were at the foundation of the native taste in art; modified and refined by the Grecian spirit in neighboring Etruria. With Constantine began, at his Eastern capital in the fourth century of the Christian era, a style of painting, Asiatic in caste though Christian in sentiment, called Byzantine; whose characteristics, relating to both form and color live in the paintings which cover the walls of Eastern or Greek churches at this day.

In form the Byzantine designed only single figures, and hence had no perspective; it did not attempt portrait; and it had no back-ground or shadow giving projection to the figure. In the postures of the head there was a rigid stiffness; not a feature is animated with any expression; the cheeks are lank and corpse-like; the bodies are meager and lifeless; and the dress seems stiff as with starch and has no flowing grace. With but occasional exceptions nothing of the spirit of ancient Grecian art is met; and then only in allegorical figures where the effect is marred. Pictures of sacred persons are copied mechanically from age to age, and show scarcely a ray of true genius. As specimens of this Kugler specially notes the pictures of Mary and of Jesus. Christ on the cross is represented as sinking, his head hanging down, his knees relaxed, and his body

swayed to one side; while the Italian painters always in picturing the scene of the crucifixion represented Jesus in the full vigor of life, bearing himself upright and seeming to be victor over suffering.

In color the Byzantine painter was yet more truly Asiatic. Like the Egyptian they used the pure colors without gradation of shade or hue. The flesh color in the best paintings now met in Greek Churches is cherry red; a hue belonging only to the lips, with no variation for forehead, cheek, neck or hand. The dress is of the glaring yellow or blue, pink or purple of which the Asiatic is so fond. Though loaded with a thickness of color which itself stands out from the ground, and having a finish of polish which gives a dazzling gloss to the surface, there is no transparency in the depth of color; and the gloss is only that of burnished metal not the irradiation of color reflexes. Every observer of the Byzantine painting is struck with the amount of gold hues wrought into the work; the entire back-ground sometimes making the face of the principal figure seem to be laid upon a gilded surface. Kugler, in referring to this, remarks that the Byzantines doubtless used in former times wax to a great extent in their vehicles; while the early Italians used a lighter and more fluid vehicle. He mentions also a prevailing tint of greenish yellow; which he attributes to some metal in the vehicle which gives a streakiness to their "orpiment" or gold-pigment. The whole aspect of the Byzantine coloring is that of gaudiness and excess of ornamentation, and the lack of those studied and graded hues which give expression to features. Yet there were stages in its progress when the Byzantine attained to great merit; and some of its artists had power to speak to the soul like the old masters themselves. Thus in the age of Constantine Anastasius dwells with enthusiasm on a picture of St. Euphemia preserved at Amasia; while in the same age Gregory of Nyssa is said to have been moved to tears by a painting of the sacrifice of Isaac. In the tenth century, when the style of the Byzantine Church had for centuries been perfecting, an ecclesiastic named Nicon is said to have decorated a church near Sparta with pictures, "equal to the most perfect works of Zeuxis and Polygnotus." These incidents indicate a genuine taste prevailing even in the age usually regarded the darkest in history.

The result of the controversy between the Western and Eastern Church as to the legitimacy of the adoration paid to images in the churches had a powerful tendency to increase the esteem which painting as an art had already obtained. From the natural tendency of human nature to extremes, spiritual Christians, who had found

profit from the culture of art in the simple ages when only truly enlightened minds, that would not abuse them, came into their fold, were led to oppose works of art in churches, when, in the age of Constantine, the populace, who could not discriminate between their old and the new faith, came flocking to give in their adhesion to the Christian creed because it was now the State religion, and bowed in reverence to the sculptured and painted images of Christ and of eminent Christians as they had been accustomed to do homage to their former deities. Just before the time of Constantine, at a council of the Church held at Illiberis in the extreme south of France, a town then decayed but rebuilt by Constantine in honor of his mother, a decree was adopted to the effect, "that pictures ought not to be in the Church, lest what is painted on the walls should be superstitiously reverenced and worshipped." A reaction naturally followed, since the abuse of art was no valid objection to its use; and there was, again, a tendency to the opposite extreme, the Western Church being led to an excess in the employ of images and the Eastern of paintings. Two and a half centuries later, about A. D. 590, Gregory the Great, wrote, "Paintings ought to be retained in the churches in order that those ignorant of letters may, as it were, read by looking on the walls what they are not able to read in the manuscripts." When a century yet later, A. D. 692, the Council of Constantinople under Justinian was held, and a canon was adopted censuring the representation in "carved images" of "Christ the Lamb of God after a human model," an act which gave such offence to the Roman Church as to bring to a crisis the separation long pending, it was sculpture, not painting, against which the Greek Church arrayed itself. The conventual artists still kept alive the Byzantine style unchanged for ages, while everything else seemed to be changed. In fact, it was under the same Justinian who secured the passage of the canon against sculpture, that the art of painting, as an accessory to his grand church edifices, rose to its highest stage of perfection. Maintaining its sway in the East in connection with the Byzantine style of church architecture, it passed with it to Venice in Italy when St. Mark's was erected; and, became in fact a fundamental characteristic of the subsequent Venetian School, whose rich coloring, manifestly learned from Byzantine artists, ever remained the distinguishing feature of that branch of Italian painting.

The innumerable pictures now filling the churches of Greece, of Russia and of Western Asia, where the faith and order of the Greek or Oriental Church prevails, naturally leads to an inquiry after the

centre and fount whence emanates this flood of stereotyped paintings, orthodox in form and color; a stream that is never dry, and has flowed on uninterrupted for ages. In the time of Constantine convents filled with men devoted to a life of study and private labor for the church had won to their enclosures many men of superior minds. When now Greek ecclesiastics mingling in society sought refined culture and courtly recreation in the practice of art, in the convents the painting of images of Christ and of saints became a favorite pursuit. Even Chrysostom, or the golden-mouthed, the Demosthenes of the Grecian pulpit, living about fifty years after Constantine, was, as we have noticed, an artist as well as a preacher; and as he himself wrote was specially "devoted to encaustic painting." The men secluded from the world in convents had the same taste; with no active duties to interfere with their entire devotion to it.

At a very early day leading devotees of the Greek Church selected as a fit and safe location for extensive schools and monastic institutions of their faith the promontory of Mt. Athos; whose position, off the track of passing fleets and armies, and the height of whose summit, which casts a shadow in the morning eighty-seven miles inland, conspired to make it inaccessible and undisturbed; while its sublime form, that had awed rude generations and inspired ages of culture, gave it an air of reverence. This mountain with a narrow strip of land bordering the sea around its foot, was covered with monasteries and with little villages inhabited by servants and retainers of the convents. The most extensive libraries, rich with the works of the classic as well as of ecclesiastical Greek authors, were here gathered; repositories whence modern ages have been favored to draw. Here grew up the chief home of Byzantine Art, the great work-shop of painters for the Greek Church; from whose accumulated stores not only Greece, but Russia and other lands of the Greek faith have been supplied with pictures of Christ and of saints for their churches. From this office to which it had become consecrated, as well as from its awe-inspiring form, the mountain took the name among the Greeks of "*Hagion Oros*," in the Italian, "*Monte Santo*," or Holy Mount. Prior to the Greek Revolution in 1828, there were no less than twenty-two convents occupied by over four thousand monks; a large portion of whom were devoted to the art so much in demand in the Greek Church. The Revolution, which left Mt. Athos in the Turkish portion of Greece, as anciently it was in Macedon, has somewhat restricted the freedom, but has not interrupted the busy toil of these devoted ecclesiastic artists.

Sect. 5. The Romanesque, or rude native style of Painting long Predominant in Northern Italy.

As we have observed, Kugler gives the general title Romanesque to the painting prevalent in the Christian churches of Italy from the earliest period of the introduction of Christianity. The art of the first four or five centuries after the Christian era, Kugler has shown, was but the continuation of the Roman style as practiced mainly by Greek artists in Italy; a style of art which continued down to the invasion of the Longobards, when it was thoroughly broken up and lost in decay as were other features of Roman civilization. The greater quiet of the Eastern Capitol, its proximity to the spirit of art in old Greece, and its liberal court patronage, made Byzantine painting to become the ruling style in the decay of the Roman. When, however, the two branches of the church became fully separated, a determined departure from the Eastern style of art in every department became awakened at Rome.

The controversy as to images, though it related only to their use as objects through which adoration was paid to the beings whom they represented, had the effect to secure their destruction in the Greek Churches. The effect was to turn popular odium against statuary in general, and to restrict artists from taking as their models in drawing for their paintings the matchless forms executed by their Grecian ancestry. The adherence to the use of images in the Roman Church had the contrary effect among painters in that Church. The Byzantine artists, compelled to seek their main effects through color, hid as far as possible under drapery the forms of their pictured saints, making their dress cover their necks and breasts, and even their feet and hands. The Roman painters, though they did not directly make the antique statue a model, yet did indirectly catch its character and transfer its proportions to their drawings. In form, therefore, the Romanesque style was *statuesque;* the figure having far more of symmetry and of the energy of action than was seen in the Byzantine. In coloring, for the same reason, there was a subdued and even lack-lustre tone; the cloudy gray of a time-worn marble statue, rather than the gaudy sky-blue, crimson and purple of an Oriental grandee.

The special seats where this style was studied were Rome and Parma; and it prevailed in the Umbrian Valleys and in Lombardy. It had its stages of improvement and degeneracy; which to a great extent were the result of the spirit of freedom of thought or of ecclesiastical dogmatism prevailing in different ages and nations. Thus

in the Umbrian dependencies of Rome painting became more rigid and mechanical in outline, and more lifeless in color; while amid the independent thought of Lombardy a rude copying of nature in drawing was attempted. Under Charlemagne, an ardent opposer of the use of images for purposes of devotion, though a favorer of their multiplication as educators of the people, the Romanesque style of painting reached its highest stage of development. Specimens of the painting of this improved style are preserved at Rome, Paris and Munich; and, such students of this style of art as Kugler, commend in them not only the executions of form manifestly modeled after the antique, but also the laying on of the colors, evidently the touch of superior skill and culture.

Two branches of ornamental coloring belonging properly to Decorative Art practiced during this period, Mosaic which illustrates the higher effects of painting, and manuscript illumination which belongs to the lower walks of art, are instructive relics of this age. The fine old Mosaics now met in the most ancient Churches of Italy are supposed to have been executed between the fifth and ninth centuries after Christ. They are usually located in the arches of the choir back of the altar. They represent usually Christ of colossal size in the centre, with saints, seldom Mary, on either hand. Above is the symbol of the Father's hand holding a crown, and underneath the Lamb with the twelve surrounding him. Sometimes the Lamb on the throne, according to the Apocalyptic vision, is the central figure; while the Jewish emblems of the seven candlesticks and twenty-four elders stand around. In some of the larger Churches kindred representations in Mosaic are seen over the arch leading into the transept. The expression of Christ in these Mosaics is always placid and gentle, and his garments hang in plain folds. In the Church of Santa Maria Maggiore at Rome are Mosaics representing Old Testament as well as New Testament scenes; on one side incidents from the lives of Abraham, Isaac and Jacob, and on the other side of Moses and Joshua; whose execution must have been in the earlier days of the art, since they are referred to in the controversy of the eighth century as ancient authority for pictures in churches. The excellence of outline and coloring in these Mosaics, which could not perish with time, is a testimony to the merit of paintings proper, which must have decayed.

Prevailing with a sway more or less decided and an excellence more or less meritorious until the eleventh Century, the Romanesque began to give way before the rise and rapid progress of modern

painting in Italy. The first innovation was the introduction of the Byzantine style of coloring into Venice and other commercial cities which had a trade with the East. The next trenching on its domain was a return to the method of drawing from nature in Padua, Florence, Milan and other cities where there was special freedom of thought in science, philosophy and religion. The tracing of those influences which have given rise to the various schools in modern art is perhaps even more fascinating than is the same study of the progress in literature; the links of whose continuous chain of causes, running back into the labyrinth of the Middle Ages, may be yet made to verify Coleridge's suggestive remark as to this period of the world's history; "designated," he said, "the Dark Ages, because we are in the dark about them."

CHAPTER VII.

THE RISE OF MODERN PAINTING IN SOUTHERN EUROPE, INCLUDING ITALY AND SPAIN; PRE-EMINENTLY RELIGIOUS IN ITS THEMES, CLASSIC IN FORMS, AND SPECIALLY CHARACTERIZED BY PERFECTION OF LIGHTS IN COLORING.

In modern Christian painting, perhaps more than in any other department of human attainment in art, science, philosophy or religion, there is an embodiment of the progress of human thought under the influence of the Divine religion of Jesus. The principles of truth and grace stored in the Old Testament, like grains of wheat imbedded in the preserving bitumen which coats Egyptian mummies, lay buried without germinating for ages; and even the Heavenly Wisdom of Jesus, as he himself intimated, could "bring forth no fruit, except it fell into the ground and died;" sleeping how long it was not his to reveal. At first the purely spiritual ideas of Christianity led artists, as we have seen, to picture only in symbols the doctrines of their faith; while the forms of Jesus and his apostles and the great leaders in his Divine Mission, were portrayed with an artless simplicity begotten by the instinctive impressions formed of their character from the reading of their lives. After this childhood period of simplicity, followed ages, longer than human sagacity might have anticipated, of the transition period of youth; swayed

by its differing and often conflicting impulses, in successive prosperity and adversity; now sensuous to excess, now ascetic to a fault, as the natural extreme of oscillating sentiment; yet amid all these vacillations growing in strength of thought, refining in chastened taste, and rising in aspirations after manly development. That maturity of manhood has not probably been yet reached by the Christian Church as a body.

It was at the era when science and philosophy in every department took a new spring in different nations of Southern and Western Europe, both among the adherents to the predominant Church whose head was at Rome, and in the minds of Reformers of every variety of opinion, that the revival of art and religion united, manifesting itself in the spirit of love for intellectual improvement which had been awakened in the eighth and ninth centuries under Alfred of England and Charlemagne of France, requiring four or five generations to take root, began to show fruit in the fourteenth, and ripened into maturity in the fifteenth and sixteenth centuries. In England Roger Bacon in science, Chaucer in letters and Wickliffe in religious inquiry opened the door to the appearance of such men as Lord Bacon and Newton, Shakspeare and Milton, and the lights of the Anglican Church. In France and Germany the appearance of such men as Copernicus and Tycho Brahe in Science, of Rabelais in letters, and of Thomas Aquinas in theological learning, led on to the rise of Descartes and Leibnitz, of Luther and Pascal. In Italy, the land pre-eminent in art, Columbus and Galileo, Lorenzo and Machiavelli, Dante and Petrarch, Savonarola and Leo X. were natural products of the age that gave birth to Giotto and Brunelleschi, opening the way for Lionardo, Raphael and M. Angelo.

In the division of the Schools of Painting that arose, flourished and declined in Modern Italy from the twelfth to the eighteenth centuries, regard must be had to the characteristics of different peoples, and the effect of local circumstances on their native artists; as well as to the awakened and growing spirit of intellectual progress in each. Native inborn temperament distinguished the Tuscan of Grecian descent from the Umbrian of Italian lineage; commerce with the East made the Venetian most unlike to the agricultural Sienese; and the republican Florentine and the hierarchial Roman, the scholastic Paduan and the romantic Neapolitan necessarily belonged to different schools in art. The meeting of all these temperaments in the cosmopolitan and comprehensive leaders in art, first in Giotto, afterwards in the three great masters, Lionardo, Raphael and M.

Angelo, naturally brought in new eras, throwing a new phase over all the schools originating with the former and modified by the latter. As Jarves has stated, the ordinary division has recognized five leading Italian schools; the Tuscan, Roman, Bolognese, Venetian and Lombard: under which subdivisions must be made; in the Tuscan, the schools of Florence, Siena and Pisa; in the Roman, the Roman proper and the Neapolitan; in the Lombard the schools of Milan, of Parma, of Mantua, of Cremona, and of Verona, to which some would add those of Genoa and Piedmont. A division, however, having regard to the periods of historical development, as also to grouping and clustering of elements of style, may be more serviceable to the ordinary student.

In all these schools and their subdivisions, and that in the different stages of their progress, Italian painters have, when compared with those of other lands and ages, had three leading characteristics as to subjects, forms and styles of coloring. Their themes have been pre-eminently Christian; the Italian artist's devotion to religious representations far surpassing in its exclusiveness that of the hero-worshipping Greeks, and contrasting specially with the secular spirit of the painters of Northern and Western Europe. The forms studied by Italian painters have been pre-eminently classical in their model; genuine artists, like the great masters of early and later times already mentioned, finding their models, as did the Greeks, in nature's own select specimens: while men of less genius or of less independent sentiment copied the standards furnished by the past, which chanced sometimes to be the master-pieces of pure Grecian taste, but sometimes the unworthy conventional types hallowed in a corrupt ecclesiastical usage. In coloring, though there was great discrepancy between the rich deep twilight hues of the Venetian, the pale hazy morning shades of the Umbrian, and the clear bright noonday radiance of the Florentine, yet all showed the enchanting sky peculiar to the climate of Italy whence all drew their inspiration; the Italian painters attaining perfection in the execution of lights in color.

To trace these attributes of modern Italian painting as they began with Cimabue and gained universal ascendency under Giotto, as they developed to perfection of expression and action in the Tuscan, of form in the Paduan, and of color in the Venetian Schools, as they were combined in the three great masters, modifying through their influence all the schools, as they struggled for control in the mystic Neapolitan and through that in the superstitious Spanish School, as they revived and aspired to a new and combined perfection in the

Eclectic and to a new youth in the Natural Schools, and finally as they declined, flickering for a generation as they were expiring till their light went out in Italy, this chain of instructive history will be the subject of the sections of this chapter.

SECTION 1ST. THE EARLY REACTION OF THE LOVE OF NATURE AND OF GENIUS IN ART AGAINST FORMALISM AND DOGMATISM IN NORTHERN ITALY.

As already intimated, the style of painting in Italy, then having its centre so far as art and sacred learning were concerned at Rome, and hence called Romanesque, which prevailed from the fifth to the twelfth centuries, was a corruption of the Roman with some features of the Byzantine. As this was in a great measure dependent for its prominent characteristics on the style of church architecture, it was natural that the first essential modification in the style of painting should accompany improvement in the art on which it was thus dependent. Prior to this epoch, indeed, the simple force of native genius made an occasional artist rise above the spirit of his age. Such an instance is found by art critics in Giovanni or John, an Italian painter who flourished about A. D. 960; contemporary with whom was a Roman painter named Heraclius who wrote a treatise on his art as it existed in his day. A still more marked example is cited in Petrolino, whose frescoes executed about A. D. 1110 in the Church of S. S. Quattro Coronati at Rome are still admired by the side of works of a much later age. An indirect testimony to the spirit of art in that age, the early part of the twelfth century, is found in the allusions of the celebrated Monk Bernhard, whose great influence controlled the destiny even of Popes. This reforming ecclesiastic, writing about A. D. 1125, alludes with condemnation to the paintings on the walls of Convents representing "pagan and sensual subjects." The allusion is, of course, a witness of the devotion paid to this art, and of the themes to which prior artists, perhaps too severely censured by the reformer, turned their study and color; hiding, however, their work from the eye of public and especially of ecclesiastical censorship within the walls of their own cloisters.

The arched panel pictures of the Romanesque Churches, too, at the early part of the thirteenth century, began to display an improving taste. Specimens of this appeared A. D. 1200 to 1250 in Giunta of Pisa, and Berlinghieri of Lucca; whose pictures of Christ, though attenuated and stiff, have less of emaciation and more of grace than belonged to the spirit of their age. A yet more decided

advance is traced in the paintings of Guido of Siena who flourished about 1221, of Andrea Tafi, from 1213 to 1291, of Ugolino of Siena from 1280 to 1339, and of Gaddo Gaddi from 1239 to 1312. Guido and Ugolino showed a special grace. Tafi learned Mosaic of a Byzantine artist; he adorned St. Mark's in Venice; and in company with Apollonius, a Byzantine, he executed mosaics of a rude but forcible style in the cupola of the baptistery at Florence. The works of Gaddi are in the Cathedral of Florence.

The greatest artist, next to arise in this advancing line was Duccio of Siena; who flourished from 1282 to 1339, and whose only works extant are in the Cathedral of his native city. Perfectly original, rising above the models around him, he threw individual character into his subjects; a fine instance of which is his representation of the mother of Jesus fainting at the foot of his cross, while the group around are divided between grief for the suffering Son and anxiety for the sinking mother. The consideration of these historic links in the history of the rise of modern painting is most important as indicating that it is no miraculous sudden start which developes the highest genius; it is rather the steady nurturing of ages under favoring causes. The leading characteristics of this class of newly arising artists was, that they drew portraits of saints, not as emaciated and cadaverous like dead men, according to the Latin method; nor as painted men and women, like puppets decked for a show, after the Byzantine style; but they made them beings of flesh and blood, "men of like passions with us all."

The noblest leader of all in this formative era was Cimabue; like many other men of note, more illustrious in his pupils than in his own works. Cimabue flourished from A. D. 1240 to 1302. Preceded by artists who had already showed the right path, and associated with others just alluded to, Cimabue was the originator of the Natural School, which became established under his pupil Giotto. Though not able fully to break away from the trammels of the formal Latin outline and Byzantine coloring, which had prevailed for generations, and still more unable to reach without any teacher, or model the higher elements of symmetry, perspective and chiaroscuro, he yet attained a truth and grandeur of expression which some critics deem worthy of comparison with the power of M. Angelo. Vasari, the Italian historian and critic of his brother artists, says of Cimabue's portrait of St. Francis, now in the Church of Santa Croce at Florence, "He drew that which was a new thing in those times, (*di naturale come seppe il meglio,*) from nature as though

he knew her the best model." This drawing from nature was the all-important distinction between him and his able cotemporaries. In the fields, as well as the crowded streets, he sought models which he studiously copied; the genius of Giotto was revealed to his superior mind by a simple drawing from nature made by the shepherd boy; and he established a school of drawing which became the first germ of the Schools of Design and Academies of Art which have since made Italy and Europe so illustrious in artists of the first skill.

The faults of Cimabue's style were emaciation in the frame and stiffness in the limbs of his figures, his whole thought being absorbed in the execution of the features; which faults were transmitted to his pupils. Giotto never rose above them, and in Dante, another pupil who soon found his genius belonged to the range of poetry more than to painting, they were most marked, as is seen in the celebrated Beatrice, which though not his workmanship is the embodiment of his conception. The features of this gem of art, more precious for its poetical associations than even for its artistic merit, are radiant with the light and animation of the upper world; while the feet and even the hands were manifestly made for no higher sphere than that of the low earth. Both as an artist and a teacher, Cimabue is the leading spirit with whom begins the history of Modern Painting in Italy.

Sect. 2. The Natural Style Established under Giotto and the rise of Distinct Schools under its Influence.

As Cimabue was riding one day into the country, he saw a shepherd boy, reclining on the ground, engaged in drawing with a bit of slate on a smooth stone, while his flock browsed around. Alighting and looking at the boy's picture, Cimabue found that he had executed a most natural and admirable likeness of a sheep standing nigh him. The marks of superior genius in the boy, now only twelve years of age, were so manifest that the artist prevailed on his father, but an humble peasant, to allow him to take him with him to Florence and train him in his school of drawing and coloring. Here his proficiency was rapidly developed; a specimen of which he gave one day when he painted a fly on a partially finished painting of his master, so lifelike that as he was about to recommence his work, noticing the intruder, he brushed his hand over the shrewd boy's work to drive the supposed insect away.

As Giotto grew in years he became more completely independent in his method; and was soon the acknowledged leader in the natural

style of painting. The age was prepared for such a leader; the Dominicans, the conservators of art as the Benedictines were of literature, being eager to adopt any improvement in their favorite art· while the political disputes of the Guelphs and Ghibellines prompted the authorities at Rome to seek the good-will and advancement of the people of Northern Italy, especially in art. Giotto, moreover, possessed those attributes, which fitted him, like Apelles, to be a popular leader. Quick of apprehension and laboriously industrious, he not only studied and worked laboriously under his early teacher and in his native Tuscany; but he traveled through Italy, going south to Naples, again north to Piedmont, then over the Alps into France; seeking out everywhere the best artists, inquiring into their methods and explaining his own, improving upon any excellence in others and seeking to improve all he met. Possessed of unrivalled genius himself, and perfectly unselfish and thoughtless of anything but the advancement of his art, he imparted his knowledge and experience to any gifted fellow-artist and sought to advance the merit and fame of every worthy rival. Above all, in Giotto, as in a large class of great leaders, an equable temper, joined with a naturally lively humor, did much to give him popularity. As a specimen it is related of him, that one evening on his way to a dress party, in rich gala costume, a pig ran between his feet and threw him prone in the mud; when immediately rising in genial good nature he thus apostrophized the offender: "You are quite right brute. I, who have gained so much by your bristles, have never given you even a dish of soup." This equanimity carried Giotto through the fearful political conflicts of the Guelphs and Ghibellines, which had their seat at Florence, preserving the good will of both parties as a man loving his country, but sincerely judging that he could best serve it by entire devotion to his profession.

The style of Giotto had its faults as well as its excellencies. His excellencies were, perfect conformity to nature in the attitude, expression and actions of his subjects; and fertile invention in the dramatic energy imparted to his figures, and in their effective grouping. A specimen of his admirable success in attitudes is seen in his fresco of St. Francis causing a fountain to gush forth in a desert; admirably striking in the man bending on his hands to drink. His portrait of Dante, his fellow-pupil in art and his counterpart in dramatic power in poetry, is a master-piece of natural enthusiasm infused into a painted likeness. His Last Supper of Christ, in the Academy of Florence, is regarded a model of skill in the circular grouping of the

twelve about Jesus. In his allegorical paintings, in the Campo Santo of Pisa and elsewhere, Giotto showed himself a Dante in awing dramatic power; and Dante's sincere and strong attachment to Giotto, immortalized in his lines contrasting him with Cimabue his teacher, are a testimony to their congeniality of tastes. Giotto's peculiar excellence, as remarked, was his drawing from nature. It has been suggested, that it was fortunate for the purity of art at its revival in Italy, that the reliques of ancient art were exhumed only fast enough to become hints, rather than models to the great founders of modern styles. A century before Giotto's day Nicolo the Pisan, from beholding a single Greek sarcophagus brought home by some adventurers and placed at the door-way of the Cathedral of Pisa, had the idea suggested which made him the leader in a return to the natural style in the art of sculpture; and Giotto had little more of exhumed relics of ancient art to serve him as a guide and prompter. The principles of nature herself in her works, and in her methods of working, became Giotto's great study. Like other leading artists, as Nicolo, Orcagna, Ghiberti, Masaccio, Angelico, Leonardo, Raphael and M. Angelo, Giotto was a comprehensive genius, embracing in the range of his study and even of his practice drawing, sculpture, architecture, painting, music and poetry. An interesting instance of his power in different arts and of his reputation in them all was given when Pope Benedict IX. sent to him to furnish a plan for a new church; seeking evidently a specimen of his capacity which should determine his employ at Rome as architect of the Papal Court. Giotto, pausing a moment in his work, took a pencil, and with a sweep of his hand drew a circle which seemed perfect in every part. Handing this to the messengers, he told them to bear it back to the holy father as his reply; and nothing else could they obtain from him in response to their message. The Pope, however construed aright this testimonial to his general power; and he employed the artist in his proposed work.

The influence of Giotto was most felt at Florence, the centre of his early home; and he left there not less than one hundred pupils to carry out the principles of painting which he had introduced. In Naples he met with a truly able and appreciative comrade in art, named Simone; who prior to their meeting in 1327, had already become popular as an artist, but was now in the shade. Giotto in generous friendship inquired as to his methods and explained to him his own; and an undying friendship arose between the two artists, which was greatly to the advancement of true art in

Naples. Every variety of painting then known was practiced by Giotto; fresco, tempera, Mosaic and miniature, and the testimony of Cennini, as well as modern analysis of his works, shows a wondrous progress in his knowledge of materials and methods. M. Angelo used to study with admiration his preserved works; especially eulogizing his picture of the death of the mother of Jesus, in which Christ is represented as holding in his arms a soul in the form of a babe. His frescoes, in recent times uncovered, executed in the Campo Santo at Pisa, have opened even in modern days a new field of art study.

It is of course only among artists independent in their methods, and each for himself studying nature in his own way, that separation into schools arises. In the Byzantine and old Latin styles, in which each generation copied slavishly the work of its predecessor, there could be no distinction of schools in painting; since there were no distinct ideas on which to base a separation. The one hundred pupils left by Giotto in Florence became his successors in style. About A. D. 1375, a generation after his death, his method, we learn, was introduced into Milan by an artist named Giovanni, and into Venice by another named Antonio; in the latter of which cities, however, it failed to supplant the Byzantine style. The impulse given by genius, however, is always greater than its simple impress; and from Giotto dates the origin of the distinct schools which soon gave special characteristics to Italian painters.

Sect. 3. The Tuscan Schools; the Dramatic of Florence and the Contemplative of Siena.

The influence of Giotto, though felt in every part of Italy and on painters of every school, was naturally the greatest in his own native Tuscany. The spirit of the Asiatic Greek lingered still in the Etruscan race, making them ambitious of leadership in art; content to be first in gorgeous Byzantine while no other style was attainable, but prompt to follow any leader whose genius would bring back truth to nature in painting, as Nicolo had in sculpture. In Tuscany there were two classes of people, both roused by the spirit of Giotto; one of which, however, manifested this impulse quite differently from the other. There were the commercial class of Florence, cosmopolitan in character, and moved to ecstacy by the dramatic action accompanying natural passion. There were, on the other hand, the quiet, thoughtful people of the valleys, devoted to agriculture, with the town of Siena as their staid metropolis; and its people loved far more the

contemplative expressiveness belonging equally to nature in quiet life.

The Florentines, boasting in the thirteenth century of two hundred cloth manufactories and of an annual municipal revenue of about $3,000,000, larger than that of all England in the fifteenth century, a people who voted $100,000 for a bronze gate, and $5,000,000 for the bell-tower of their metropolitan cathedral, were pre-eminently worldly in their ambition; a characteristic strikingly illustrated in the wording of the decree commissioning Arnolfo as the architect of their magnificent Cathedral; a document still preserved. The decree runs thus, "Whereas the chief aim of a people of illustrious origin should be to act in such a way that from its seen works every one should recognize its wise and magnanimous councils, we order Arnolfo our chief architect to prepare a model or design for the complete rebuilding of our sacred edifice; restoring it in the style of the greatest magnificence which it is possible for human genius to conceive; since it has been decreed in the council, both the popular and the select branch, by the ablest men of this city, that nothing should be undertaken for the community that did not correspond to the ideas of its most enlightened citizens, moved by one purpose to promote the grandeur and glory of the country." Although it is a sanctuary for Divine worship thus decreed, not a thought akin to that of Solomon, awed at the responsible task of rearing a temple worthy of Him whose throne is the Heavens, seems to enter the Florentine's mind: to him there is no place equal to the proud mart which had given him his wealth.

Nothing could be a more perfect counterpart to this than the spirit of the devout, self-abnegating Sienese. Over the door of their council was inscribed from the Latin Vulgate the words of Paul,[1] "Omne quodcumque facitis in verbo aut in opere, omnia in nomine Domini Jesu Christi, gratias agentes Deo et Patri per ipsum;" Whatsoever ye do in word or deed do all in the name of the Lord Jesus Christ, giving thanks to God for him. When Duccio, one of their best painters was called to execute his celebrated altar piece, he pledged himself in his contract dated October 9th, 1308, "I will execute it according to my best ability and as the Lord shall grant me skill;" and when it was finished the priests, with a procession of all the people of the city, carried it in solemn devotion to hang it in its place, giving up the whole day to thanksgiving and prayer and

[1] Col. iii. 17.

the bestowing of alms on the poor. While this was their piety towards God their social virtue was illustrated in the statement of their old chronicler Brandone, who, in A. D. 1317, says, "Every one minds his own business and all love each other as brethren;" as also in the decree passed A. D. 1438, concerning the architect of their Cathedral, "no one even suspected of immorality shall be eligible."

In their politics, too, the Florentines and the Sienese were equally the antipodes of each other. The Florentines with the proud spirit of self-independence were democratic in their own chosen government, and hence adherents of the Guelf party which sided with the Popes in their contest with the house of Austria that had secured the German throne, since this left them as a people to select their own rulers; and thus art in Florence began its noble career under a popular government, though it reached its perfection by the great masters under the enlightened sway of the princes of the Medici family. The Sienese, however, loyal to the old order of things in government, devoted to their sovereign as to their God, were, like the Sicyonese by the side of the Athenians, chivalrous and royalist, and from the first adhered to the Ghibelline or Imperial party.

The characteristics of the two Tuscan schools of painting existing before Giotto's day, though taking their decided cast from his direct influence, might readily be anticipated. Neither of these schools was contented with the profuse glare and ornament of the Byzantine style, the degenerate legacy of modern Greece; nor did either turn to the old type of the ideal in art, some of whose master-pieces they had inherited from ancient Greece: but, true to the spirit of their ancestry, they went where the true Greek artist, under circumstances very different, had gone, to the ever varying field of nature itself. The men and things, however, in nature which the Florentine and the Sienese artist saw about them were most unlike; and hence the differences in their style. The cast of the Florentine style has been called dramatic, that of the Sienese contemplative. The themes of both were mainly religious; but the Florentine sought to present the external, to make the sacred scene stirring, and by outward splendor to exalt its sanctity. The Sienese was absorbed in the sentiment to be expressed; he sought to make his pictures a sermon full of solemn thought to those who studied them. Though both avoided the glare of the Venetian painters, one gave a lively cheerfulness to the hues as well as to the action and expression of his piece; while the other threw a grave and even sombre coloring over the real saints whose postures and looks of devotion he depicted. From the commence-

ment, through several generations of their associated history, the two schools preserved this distinguishing type; worthy of special consideration by the student of the methods of analysis in Art Criticism.

Of Giotto's one hundred pupils some had influence in the establishment of the Florentine School. An able artist named Spinello Aretino, born when Giotto was thirty-two years old, A. D. 1308, anticipated by two centuries the spirit of the Reformation in religion and exhibited it in his works. Living to the age of about one hundred years, he was called when ninety years old to design the life of St. Benedict the great Reformer in the Church of St. Miniato at Florence; in which he introduced a vivid representation of the struggle between the Empire and the Papacy. His great work, "The Fall of the Rebel Angels at Arezzo" is lost. More bold and less tender than Giotto he gave the impassioned action of the drama to the Florentine style of painting which Orcagna afterwards perfected. Associated with him, as a sort of counterpart, was Buffulmaco, an artist of great power but fond of the sportive. His chief themes were Scripture incidents and characters; among the best of which are The Building of the Ark, and Scenes in Christ's Life. Sacred themes could not put restraint on his wit; as was instanced in his picturing Luke the evangelist blowing the ink out of his pen; and in his revenge on a troublesome friar by painting on an altar-piece in water colors, which a sponge would take off, a young bear nestled in the arms of the mother of Jesus.

Orcagna, the next great leader in the school, born A. D. 1329, grew up under the influence which the perfected sculpture of Ghiberti exerted on artists. His works show by their fine preservation the improved material which his skill enabled him to use; while the sublimity of action which he threw into his subjects made him the precursor of M. Angelo. As the Raphael, naturally accompanying as a feminine counterpart the masculine Orcagna, Angelico, called Fra, a contraction for Frater or brother, the artist monk born A. D. 1387, added a new element to the developing Florentine; that of an intense and almost supernatural earnestness of manner and of an unearthly etherealness of mould in his figures. There is a bewitching fascination about his feminine angels which has called forth extravagant eulogiums from critics of succeeding generations and of different lands, and which have been adored as more than human by his brother monks who have succeeded to the heritage of the convents upon whose walls he breathed out his sweet spirit. It was in his age that the art-critic Cennini lived; whose full descriptions

of the artists of this school are so valuable to the thorough student of the history of art.

While many artists of merit accompanied the leading masters mentioned, one of the successors of Angelico, Massacio, born A. D. 1402, became the author of an independent style. He studied architectural perspective under the great Brunelleschi; from whom the grand characteristic of his style became scientific accuracy of form. He drew from the nude figure, both male and female; and is usually ranked as the perfecter of the natural style, adding, as he did, exactness of proportion and symmetry to the qualities of action and expression first attained in the Florentine, then etherealized under Angelico. After Massacio one more eminent pioneer in the Florentine school led on to the age of the grand masters. Ghirlandaio, born 1449, the teacher of M. Angelo, drew even the mother of Jesus, with the holy child himself, from living models. All his figures, even those of servant women, are princesses in mien and bearing. The grandeur of conception and fearlessness in attempt which characterized Ghirlandaio and his works is exhibited in his bold proposal to the Florentine Court to cover the whole line of the walls of their city on its exterior face with historical frescoes. From him the Florentine School caught its last characteristic feature, which became a formative element in the three climactic artists, who, after Ghirlandaio, made the history of painting in Florence and in all the world so illustrious.

While these leaders were appearing in Florence, a succession kindred in principle, but formed under different circumstances were brought forward in Siena. Though the pomp and display of Florence had given special prominence to the artist's profession, Siena seems to have been the natural first home and seat of art in Tuscany. There in the twelfth century, a hundred years even before Cimabue, a fraternity of artists chiefly sculptors existed; whose bond of agreement, published in 1355, though existing before, is in keeping with the spirit which we have seen to be peculiar to the Sienese. Its pious character is exhibited in the preamble, "Since we are teachers to ignorant men," and "since in God every perfection is eminently united," "we will in our work earnestly ask the aid of the Divine grace." Its moral spirit is set forth in the provision, "Any member of our guild who shall dare to use in his work gold, silver or color other than that which he may have promised to employ, as for instance alloyed gold for pure gold, tin for silver, cobalt blue for ultramarine, indigo for azure, red ochre or carmine for cinnabar, shall be

punished and fined upon every conviction ten pounds." The object of this provision seems to have been to keep up the reputation of their fraternity for excellency of workmanship, quite as much as to promote individual moral integrity; and hence the Tuscan paintings have always been marked for the durableness of their colors. Out of this association seems to have grown the order of St. Luke, named from the tradition that Luke was an artist; a fraternity made up at first of such men as the *orifici* or common gilders, but embracing afterwards the ablest artists of succeeding generations, such as Ghiberti, Brunelleschi, Orcagna and a long subsequent list.

Among the Sienese fraternity was found in the age of Giotto Simone Martini, born 1284, whose congenial taste drew him to Giotto as his teacher and most attached friend. Under his teaching Simone's style was transformed into that natural sweet expression which became a leading type in the established Sienese School. Simone traveled extensively, visiting even Avignon in France, to perfect as well as to practice his art in different fields; but his settled style, beginning with the dramatic action which Giotto infused as the breath of its natural life into Florentine art, became a softened lyric, more tender in sentiment and more plaintive in expression than suited the Florentine. After Simone the next great master of this school was Ambrogio, born 1265. Of him the historian and critic Vasari, himself of the Florentine School, says, "In his youth Ambrogio studied literature;" and this he argues made him "eminent as an artist." Ambrogio lived to be 83 years old; and was laborious during them all. He painted historical scenes, after the Florentine type, and allegorical in the Sienese style. His greatest work, "The Career of a Franciscan Missionary" is lost; one of whose scenes, the death of the missionary in the midst of a terrific hurricane with lightning and hail, anticipated the most difficult attempt of later landscape painters. One of his best preserved works is his allegorical representation of the "Effects of Good and Bad Government" in the Public Palace at Siena.

After Ambrogio one or two artists of great merit appeared in this school; but from the nature of the principle on which it was founded, the straining after an unnatural fervor beyond the power of human beings to maintain as a natural condition of mind, this style degenerated and ceased to be natural. Under Andrea Varni, born 1345, who painted the "Procession to Calvary," introducing the fabled "Wandering Jew" receiving the impress of Christ's "marred visage" of which he was to be the standing memorial, the decline of the true

Sienese became marked. The School of Siena has a future history of its own; but its true type passed for a time to the Umbrian School.

Sect. 4. The School of Padua distinguished by Classic forms; the directly associated School of Verona and Ferrara, and the indirectly connected Schools of Milan, Bologna, Modena and Parma.

Some one hundred and fifty or two hundred miles north of Tuscany runs the narrow but extended State of Venetian Lombardy; stretching from Venice on the Eastern Gulf to Milan on the Western border near Sardinia. Extending through this region are several chief cities; Padua nearest to Venice; Verona west of Padua; Mantua southwest of Verona; and Milan far to the west of all. Lying between Tuscany on the south and Lombardy on the north, are the four small States, stretching in order from the Gulf westward, of Ferrara, Bologna, Modena and Parma; each having its capital city of the same name. Each of these cities, Mantua perhaps excepted, has been the centre of a school of art, noted each in its day. Padua, the intellectual head, casting off early the uncongenial glitter of its showy neighbor Venice, became the seat of a style of art peculiar to itself; from whose influence the neighboring Lombard city of Verona and the adjoining State of Ferrara received a direct and controlling cast; while the more distant cities of Mantua and Milan and the less contiguous States of Bologna, Modena and Parma received a less direct yet decidedly formative impress.

The special pride of Padua was its University, established in the eleventh century, renowned throughout its history for its men eminent in science and literature, and most exalted by the genius of Galileo; who for about twenty years near the close of the sixteenth century was one of its Professors. The tendency of science is always to precision in form; and, under the shadow of an institution which exerted an influence so controlling on everything within its vicinity, it was natural that the chief care of its artists should be to prove faultless among judges most disposed to criticise error in geometrical and anatomical exactness.

Before the time of Giotto there were Paduan painters of note in their time. Giotto visited Padua and infused his spirit into the best of their number. The principle of Giotto, that nature should be made the painter's model, had the effect to break up the formal sameness of the Byzantine style which made all schools alike, and to bring out the decided qualities of each class of artists, with all

their differences of native character and surrounding influences. Guarcento, who flourished at Padua about A. D. 1350, in the generation succeeding Giotto, began to give cast to the school of his native city; adding to the special study of form the dramatic expression of the Florentine School and the brilliant coloring of the Venetian.

The great master of the Paduan School, however, the artist who brought out and fixed its peculiar style, was Squarcione, born A. D. 1396, who flourished therefore more than a century after Giotto. Squarcione formed the opinion that the ancient models of the great Grecian masters were a truer type for imitation than the forms of men met by the artist in society, since they were ideals founded on the real. He traveled extensively, extending his tour of observation to Greece. He collected as far as he could secure them, specimens of the antique, and made numerous drawings of others, gathering a complete Museum to carry home. On his return he established an Academy of Design; the leading feature of whose instruction was the copying of the antique as models in form. So great was the reputation of the traveled teacher that not less than one hundred pupils were gathered into his Academy; and from his admirers he received the title of "Father of Painters." His teaching led not only to the cultivation of a classic style, but to the preference of mythological themes. However excellent a training his Academy might have given to young sculptors, it led in painting to statue-like forms, which in unskilful hands became ghostly in aspect; it gave the stiff sharp outline of marble edges to folds of dress, instead of the indistinct fading off into the color of objects around, which belongs to real dress, modified as it is in appearance by its own color and that of its surroundings; and, most of all, the classic Greek ideals of men and women were far from being natural models for the Asiatics, who were subjects of the Old and New Testament narrative, and whose representation was necessarily the chief aim of Italian painters.

At Mantua, about a generation after Squarcione, Mantegna, born A. D. 1430 when Squarcione was at the zenith of his fame, began to eclipse his predecessor and master. Though called the successor of Squarcione in the Paduan School, he fixed his studio at Mantua that he might be independent and improve on the style of the Academy at Padua. He was the Phidias, as Squarcione was the Ageladas of his age in form; giving grander and fuller proportions to his figures and a greater richness to their drapery. His best piece, the "Madonna della Vittoria," now in the gallery of the Louvre at Paris, and

his cartoons of the "Triumphs of Cæsar" at Hampton Court, England, exhibit a comprehensiveness of study and elegance as well as breadth of design which stamps the artist a genius of the highest order. He is however a true Paduan in style; form being his chief aim, and color subordinate.

At Verona the history of the art of painting shows a struggle between the old Lombard and Venetian styles of coloring; but the study of form, originated in the Paduan School, held sway. The ablest of the school, Paul Veronese, flourished at a late period, after the era of the great masters; and is therefore to be referred to the era of their influence on this and other schools. In the State of Ferrara, a kindred influence was seen; the Venetian school culturing brilliance of coloring, and the Paduan inspiring grace in form among its artists. The influence of Padua on the neighbor city of Verona and the adjoining State of Ferrara was thus direct and controlling in respect to form; though in color the influence of Venice is apparent. Some critics suppose that even in Venice the ideas of classic form prevalent in Padua may be traced.

At remoter points where the influence of Giotto had been felt, his early study at Florence caused that school afterwards to be regarded as the authoritative head of subordinate schools. The ideas of form, however, which prevailed at Padua, were so congenial with Lombard taste, that even Milan in the extreme west of this State adopted the Paduan model; a tendency which at a later period invited the most thoroughly Grecian of the three great masters, Lionardo, both to practice and to teach there his peculiar style.

This indirect influence of the classic spirit as to form was more marked at Bologna. One of the earliest painters of this school was da Gubbio, a contemporary and friend of Dante, and hence flourishing in the same age with Giotto; whom Raphael afterwards ranked as mediate in excellence between Perugino of Umbria, his own teacher, and Bellini, one of the great lights of the Venetian school. At a later period, in the latter part of the fourteenth century, or in the generation succeeding that of Giotto, Vitale was a leader in the Bolognese School. A strange religious fancy led him to decline painting Jesus suffering on the cross; though he had no scruples about paintings of the Madonna. In the age of Lionardo, but while he was but a youth, the yet more famous leader in this school, Melozzo arose. He was the recognized head of the style of ceiling painting, called by Italian artists "Sotto-in-su;" or below-in-above; in which the figures are designed to be represented as ascending perpendicu-

larly and erect, with their feet downwards; in which representation the most difficult kind of foreshortening is required. By contemporaries he was extravagantly eulogized, and extolled as "the incomparable painter" and "the splendor of all Italy." The schools of Modena and Parma were comparatively unimportant until after the age of the great masters; when Parma was made forever renowned by the genius of Correggio.

Sect. 5. The School of Venice; devoted to the Attainment of richness and Brilliance of Coloring.

Venice, the chief city of Italy on the East, is as peculiar in the history of painting as it is in its location, in the habits of its people and in its affiliation with other nations. After the fall of the Roman Empire and the interruption by the Muhammedan conquest of the old routes of trade with India, the hardy and enterprising inhabitants of the marshy environs of Venice had the skill to make interest with the Saracen, and get possession of a large share of the trade by which the Romans, Greeks and Egyptians had in turn gained the wealth which they expended upon art.

Enriched by this trade, and having their taste for art awakened by intercourse with the now cultured and aspiring Arab race, the Venetians added more and more to the grandeur and beauty of their edifices, and to the grace and richness of their equipage comprised chiefly in the gondolas or boats that ploughed the canals which were the thoroughfares of their pile-built city. While in architecture both the Saracenic and Byzantine shared their patronage, in painting the rich coloring of the Byzantine became the favorite. The glaring pure colors, gold, crimson and blue which were attractive to them when yet rude in their taste, under the influence of a more refined judgment and a more comprehensive culture were softened down into the darker but even richer purple and maroon. The habits of the people, driving their business amid the shades resting even at noonday on the surface of their canals shut out from the sunlight, often too enveloped in fog, revelling at night in the subdued glare of torch-light falling on boat, water and shore, cultivated a fondness for that bewitching fascination of dim outline in gorgeous shade which is the prevailing cast of Venetian painting.

While the early taste of the School of Venice was transplanted from the East, its higher characteristics came from the opposite direction, from Germany; early in the field in the modern revival of art as well as of religion. Commercial intercourse, political adhesion

to the Imperial or Ghibelline as opposed to the Papal or Guelph party, and also kindred temperament seen in the Venetian fondness for festivities and parades, harmonizing with the pervading cheerfulness of German design in art, all seem to have tended to this close affiliation between German and Venetian artists. Up to the time of Giotto Venetian painting was substantially Byzantine. As early as A. D. 1375, Antonio, a follower of Giotto and the Florentine School, attempted to introduce an improved style; but the clear, bold outline and the transparent light coloring of the Florentine School, did not commend itself to either the people or the artists of the gorgeous island city. At a very early period, however, German artists at Vienna succeeded in giving a new cast to Venetian drawing if not to coloring; the dark style of shading of the German agreeing better with the Venetian taste, while also the domestic cheerfulness of expression peculiar to the Dutch, then associated with the German School, was more in keeping with the Venetian spirit than the sterner dramatic energy of the Florentine School. The name of Giovanni Alamanus, or John the German turned into Italian, occurring among the leaders in the new Venetian style, introduced apparently early in the fourteenth century, is an indication how perfectly domesticated and nationalized the artist of the murky Dutch lowlands had become among the lagoons of the great city of Eastern Italy. The artist whose influence in establishing this change at Venice appears to have been greatest was Gentile da Fabriano, born A. D. 1370. Trained to the Florentine style as to form, highly dramatic in his themes and in the posture and expression of his figures, yet rich and even gay in coloring and fascinating in aerial effects, he united excellences that made him a favorite not only at Venice, but also at Rome, whose critics were the most exacting as to precision in form. Michel Angelo, looking back to Gentile over a century and a-half of progress in art, regarded him as a prophet of the future in his day; and, playing upon his name, Gentile, or "the man of all nations," he said that "Gentile's works as well as his name were his autobiography."

Another stage of transition and advance in the Venetian School occurred when about A. D. 1450, the art of painting in oil was introduced into Italy. The fame of the invention of Van Eyck reached Venice through its association with Germany. Antonello, a Venetian artist, made the long voyage then required in reaching Holland; and his spirit so won on the inventor that he disclosed to him his secret. Venetian taste prepared the way for the ready adoption of

this new vehicle; which gave a richness and depth to colors never before attained, while the dark shade as well as the indistinctness of outline it allowed were equally in keeping with Venetian preference. The story of the tragic fate of one allied to him who had thus sought and found and brought home the invention so long desired by artists of every age, his secret murder by a rival artist who vainly aspired to the credit of the invention, forms a sad episode in the annals of art. From the period of the introduction of oil-painting dates the superior success of the Venetian School; since even the intelligent and comprehensive spirit of the Florentine School was so averse to the sluggish flow and labored kneading peculiar to the new vehicle, as well as to the darkness of the shades produced by it, that even down to the age of the great masters the prejudice remained. The themes of Venetian artists were still those calling for a quiet ease and dignity. Even in their Scripture pieces the figures have for their models merchant princes; and as no monarch of earth ever combined the air of lordly dignity belonging to true nobility and the courtly yet familiar bearing of a gentleman among his equals which characterized a doge of Venice, so in a city of merchant princes, artists could not fail to give a lordly grandeur to the figures put upon their canvas.

Among the leading masters of this era, born A. D. 1501, was Bellini; who died A. D. 1581, aged eighty years. Contemporary with the great masters, he preserved still the true character of the Venetian School, and transmitted it to able pupils; though the ablest of their number, Titian and Giorgione, influenced by the great masters as well as by their own superior genius, gave to Venetian art the last and highest stage of its progress. Bellini excelled especially in the magnificence of his architectural back-grounds; a feature which reached its highest excellence beneath the sweep of his pencil and the tinge of his brush, and which, because of its power, was revived by the last light of the Venetian School, Paul Veronese. To this stage in the perfection of "alluring color at Venice," begun by Gentile and perfected by Titian, Fuseli ascribes the influence which led the way to Landscape Painting; since it demonstrated the methods of securing its two leading characteristics, "the harmony due to balance of colors," and the "breadth of local tints."

Sect. 6. The Umbrian School of Central and the Neapolitan of Southern Italy; Formal in style and Mystic in Religious spirit.

In the North of Italy, within a comparatively small territory, we

have found the distinct divisions and subdivisions of schools so numerous as to require their grouping into three sections; those centring about Florence, Padua and Venice. Turning now southward all the remainder of Italy, including the central region of the Papal States and the southern dominion of Naples, may be grouped so far as the history of painting is concerned in a single section; their prevailing characteristics up to the age of the great masters being substantially one. The separation of Naples from Northern Italy by the intervening Roman States associating them locally with Rome, as well as the influence of a succession of rulers always in the interest of the Church, has produced for centuries a controlling influence on the progress of the Neapolitan race in science, literature and art, such as the native character of this mercurial people would not, if otherwise associated, have allowed.

The characteristics of the style of painting prevalent in the southern portion of Italy were a formal as opposed to a natural model in drawing, and a mystic as contrasted with a practical religious conviction in design. The first of these peculiarities was the result of that spirit, opposed to reform, which fastened on Egyptian artists a stereotyped pattern from which they dared not hazard a departure; and also the absence of any better model, existing at home or received from abroad, and suggesting new and improved ideas in art. At Rome, the paintings of orthodox pattern were after the old Latin, as opposed to the Byzantine type; without anatomical correctness in outline, devoid of expression in features, and destitute of both body and distinctness of color. The utter lack of old classic models which might give to Roman artists, as they had to Nicolo of Pisa, a new principle in form is intimated in the fact mentioned, that as late as A. D. 1450 there were collected in Rome only six specimens of ancient statuary and those not of the highest order of art. The Roman people, moreover, unlike the commercial and adventurous inhabitants of Pisa, Florence and Venice never went abroad to borrow ideas from other nations; nor were they open to receive new opinions and principles from men of genius who came among them from abroad.

The spirit of mystery and superstition, fostered during the crusades by oriental legends, which converted natural into supernatural agencies, which was credulous as to the claim to miraculous power still made by men of ascetic and monastic life, and which paid special homage to images of saints, prevailed in this more secluded section of Italy long after it had been eradicated from the more worldly-wise cities and provinces of northern Italy. The natural chief seat of

this medieval spirit was the retired valley of Umbria, north of Rome, and lying between the upper Tiber and the Apennine range. Pliny states that the Umbrians were regarded the most ancient aboriginal tribe of Italy; that the Greek colonists of Etruria, meeting them on their first entrance into Italy, called them Ombrioi, because they were regarded as remnants of the antediluvian race who escaped in their mountains from the flood. This ancestral tradition, which made their valleys the special care of Providence and the scene of Divine interposition, seems to have been rather strengthened than weakened by the doctrines of Christianity as they received them; and secluded from intercourse with other men by their inland and mountain-girt location, the dream of their early age has been left to this day unbroken by collision with the experience of more cosmopolitan neighbors. This was the home of Francis; who at the little town of Assisi founded, A. D. 1209, the ascetic and mystic brotherhood of the Franciscans. The renown of this order, as well as the lively and vigorous intelligence of the Umbrians, invited a visit from Cimabue and afterwards from Giotto; whose paintings still adorn the shrine of Assisi. Although in Umbria, as well as in other parts of Italy, the style introduced by Giotto led to the study of nature's models, this influence was restricted by the popular cast of mind and modified by counter influences coming from other schools than the Florentine. Through Ancona, the chief seaport of the Papal States on the Adriatic, the Venetian taste in coloring spread to a considerable extent; while through Urbino, an inland town where quiet thought took the place of business excitement, there came an influence from the school of Siena, leading to a fondness for themes relating to angels and to supernatural scenes as well as beings; which latter feature was already characteristic of the Umbrian artists.

The head of the Umbrian or early Roman School as it finally took shape, was Piero della Francesca; whose distinctive name indicates his relation to the Franciscan brotherhood. Born A. D. 1400, he lived to the age of ninety-four years; late enough to have known the three great masters in their early life; since A. D. 1494, the time of his death, Lionardo da Vinci was forty-two years of age, M. Angelo twenty, and Raphael eleven years old. As a teacher he may be said to have formed the style of the great painters of Umbria and Romagna. The disciple of Massacio the great Florentine dramatic artist, he practiced his art first at Perugia on the Tuscan or western side of the Tiber. Crossing, however, to the eastern side into Umbria, he gave to that part of Italy the glory of being the

foster mother of the greatest genius in art. Piero excelled in the three features requisite to success in the natural style introduced by Giotto, and constantly improved upon after his day; perspective, foreshortening, and the securing of apparent breadth of space between and around his figures; the two former of which are requisite in historical grouping without extended back-ground, while the latter is the attainment without which there can be no success in landscape painting.

Piero had as his pupils the immediate precursors and instructors of the great masters; among whom the most noted were Luca Signorelli, Antonio, Pietro Pollajuolo and Andrea Verrochio. Luca was bold in design, fond of exhibiting his anatomical skill in the nude, and noted for the air of majesty associated with even violence of action in his figures. In these respects Luca has been styled the precursor of M. Angelo; who in his "Last Judgment" has the same style both of conception and execution displayed by Luca in his "End of the World." Antonio is said to have been the first Italian artist who practiced dissection of human bodies in order to gain anatomical exactness in drawing. Verrochio was more renowned in his pupils than in his execution; for his works are few, and as far as Vasari judges, "hard and crude:" yet he had a power in giving distinctness to outlines in form, and purity to tints in color, and above all an aptness which enabled him to advance his pupils far beyond himself in skill. Among those were three destined to an illustrious future; Lionardo the first of the three great masters, Perugino the teacher of Raphael, the third of the three, and Lorenzo di Credi one of the chief lights in the future of the Umbrian School. Verrochio's most famed picture is his Baptism of Christ; in which is an angel wrought by the superior hand of Lionardo while yet a pupil.

The artist who made the Umbrian School most noted, while at the same time he departed widely from its spirit, was Pietro Vanucci, usually called Perugino, from his native place, Perugia. Born A. D. 1446, he lived till A. D. 1524. Attracted from the Etrurian border into Umbria by the fame of its school of art, his first studies gave the mystic cast of that school to his early works. Induced later in life to visit Florence he took on some of the characteristics of that school. Returning to his native city he opened a studio, received pupils, and had numerous orders for painting on Christian subjects. Becoming mercenary in spirit he employed his pupils to add to his reputation and to his revenues;

Raphael himself, as a youthful pupil, having thus been rendered serviceable. His early works were after the pietistic Umbrian type; his paintings in middle life though on Scripture themes, took more of the secular cast of the Florentine School; while the productions of his later life were some of them wanton in expression and vulgar in associations, which is especially seen in his "Assumption."

The most finished and purest of the school in this culminating age was Lorenzo di Credi. Born 1459, he flourished till 1537. In the nice elaboration of his pieces he resembled Lionardo da Vinci, and became noted as an oracle of refined taste. The influence of the celebrated Italian reformer Savanarola, and of a Dominican monk who sympathized with him, led him to the opposite extreme of Perugino's wantonness; so that he rejected the nude entirely. The spirit of the Italian reformer, however, did not tend to a forsaking of nature as the artist's model; but only to the choice of a chaste as opposed to a wanton subject. In one of his sermons Savanarola thus expressed his idea; "Creatures are beautiful in proportion as they participate in and approximate to the beauty of the Creator; and perfection of form is relative to beauty of mind. Bring hither two women equally perfect in person; let one be a saint and the other a sinner, you shall find that the saint will be more generally loved than the sinner, and that on her all eyes will be directed." Lorenzo di Credi received in its spirit this principle of the Christian reformer as the moral law of his art; and following it he became the true artist of his school.

The sweetest of the galaxy in this school at that era, the Raphael of the Umbrian painters, was Francesco Francia. Born 1450, and pursuing his art till 1517, he was warmly admired by Raphael when as a youth he knew him as an artist already mature; and from him, both as to the subjects and character of his own incomparable works, Raphael evidently received the bent which gave direction to his rapidly developing mind. Francia was fond of portraits, particularly of Madonnas; and though he designed from ideal conceptions he caught from observing nature living grace; and in this Raphael became his imitator and friendly rival. Raphael appreciated Francia's judgment; and sent him his best pieces for his criticism. Francia, too, appreciated Raphael; and spoke of him as "the Zeuxis of our age." Perhaps never in the history of art was the cast of the men who were to follow more completely foreshadowed than were Liononardo, M. Angelo and Raphael in the age of the Umbrian School preceding their appearance.

In Naples, associated as we have observed with the Roman States locally, intellectually and religiously, the spirit of art was early awakened; but the Neapolitan was less distinguished than the Umbrian or early Roman School by great masters. Contemporary even with Cimabue, Tomaso de' Stefani, born A. D. 1230 and flourishing till 1310, attained a style superior to that of his age in point of naturalness; as his paintings still seen in Naples prove. Over the principal altar in the Church of S. Domenico Maggiore is a crucifix by Stefani, which is said to have thus addressed the great theologian Thomas Aquinas as he stood admiring it, "Bene scripsisti de me, Thoma; quam ergo mercedem recipies?" "Thou hast written well of me; what reward therefore wouldst thou receive?" To which the humble theologian replied, "Non aliam nisi te," "No other but thee." This tradition bespeaks at once the merit of the work of this early Neapolitan artist, and the mystic and superstitious spirit of the early Neapolitan School. At the period of Giotto's visit to Naples, Simone, of the generation following, became an admirer of the natural style; and assisted Giotto in his paintings executed there. But the spirit of the Neapolitan was not only opposed to but intolerant of the improvement Giotto proposed. Giotto was literally driven from Naples by the opposition of his brother artists; and an order most inferior and formal succeeded. As exceptions to this prevailing inferiority there appeared about the opening of the fifteenth century two artists of originality and comparative eminence, Colantonio and his yet more eminent son-in-law Antonio Solario; whose works show that genius in art was not confined entirely to the more favored region of northern Italy. The Neapolitans claim, as a native Sicilian, Antonello da Messina, born A. D. 1414 and living till A. D. 1493; the artist already alluded to as the enterprising Venetian who visited Holland to obtain from Van Eyck his invention of oil painting.

The improved Neapolitan School began with Andrea Sabbatine, a pupil of Raphael; who devoted himself to the generous effort to create a school of a higher order in his native city. The close connection of the Neapolitan School with the Umbrian up to the era of the great masters is exemplified in the fact that the best pictures in the Neapolitan churches were by Umbrian painters; among which Perugino's grand painting of the Assumption, presenting at once the excellences and the vices of his style, first inspired Andrea to seek to excel as a painter, and directed him to Perugino's pupil Raphael as a teacher.

Sect. 7. The Age of the three Great Masters, Lionardo da Vinci, Michel Angelo and Raphael Sanzio.

In the rise of the great masters of Italian art, principles ever true, but too often overlooked as to the progress of mankind in any department of noble achievement, were illustrated. As in ancient Greece so in modern Italy, centuries were required for the development of the ripe fruits of genius; nurtured as its growing germ must be by the added experience of succeeding generations. Genius alone cannot rise to excellence; it is only genius guided by the lamp of past experience and trimming that lamp amidst midnight toil, uniting constant practice with thorough study of scientific principles, that has ever attained to pre-eminent superiority. The Italian mind is underestimated when it is only remembered that it has produced the greatest of poetic and artistic genius, as Dante, Ariosto and Tasso, and Giotto and his successors in art for four centuries, while it is forgotten that it has produced jurists like Machiavelli, astronomers like Galileo and chemists like Galvani and Volta. The three great masters in painting were paragons of industry, both in studying the science and in elaborating the practice of their art; and they lived at an era, two centuries after Giotto and Dante, when Italian intellect had in every department of human pursuit reached its acme. It was a coincidence not without significance that five years after Italian science culminated in the discovery by Columbus, A. D. 1492, of the Western World, Italian art culminated A. D. 1497 in the design of the most perfect work of art ever executed by man, "The Last Supper," of Lionardo. It is also to be especially observed in tracing the causes that produce great results that the same year, A. D. 1452, which gave birth to Lionardo the earliest born of the three masters also brought into the world Savonarola the great Italian religious reformer; while also, the very year, A. D. 1483, of the birth of Raphael the latest born of the three masters, was the year that ushered into being Luther the yet more illustrious religious reformer of Germany.

Lionardo, called da Vinci from a small town near Florence where he was born A. D. 1542, showed at an early age such a genius for art that his father, who was a lawyer, placed him under the tuition of Andrea Verocchio. His superior power after some months showed itself when his teacher employed him, as he did other pupils, to execute a portion of one of his paintings for which he had an order. The task was to paint an angel in the scene of Christ's Baptism:

which he executed with such ability, Vasari relates, that, Verocchio threw down his brush and declared he would never take it up again, in chagrin "that a child should so excel him." The picture is now preserved in the Academy of Arts at Florence. Returning home soon after, yet a mere youth, he astonished his father, who desired him to paint a piece for a peasant whom he wished to favor, by executing on a piece sawed from the trunk of a fig-tree a gorgon's head begirt with snakes, lizards and toads, so frightfully natural that the peasant was afraid of it; and such a master-piece of naturalness that it was purchased as a special treasure by the duke of Milan.

Lionardo rapidly developed into one of the most perfect ideals of personal beauty and grandeur in physical, intellectual and moral aspect. He was tall, robust, of matchless grace in feature and limb, and of muscular strength so Herculean that he could twist a horse-shoe in two with apparent ease. He became thorough master not only of the principles of the fine arts as practically studied, but of the abstruse laws of the mathematics, anatomy, optics, chemistry and mechanics as they applied to drawing, sculpture, painting, architecture and landscape-gardening; he added to these more general studies in astronomy and kindred sciences; and he became eminent, too, for skill in music and for excellence in poetry. He united the rare characteristics as a scholar of a lively wit and fascinating sprightliness in conversation with a most laborious employ of the pen; and twelve large volumes of his manuscripts now in the Ambrosian Library at Milan attest not only his diligence but the versatility and comprehensiveness of his talent and scholarship. He had idiosyncrasies of character; carrying his idea of painting objects reflected from a mirror so far as to write all his manuscripts from right to left so that a mirror must be employed to invert the lines; remaining unmarried mainly from an intellectual admiration of beauty which made him the lover of an ideal which he embodied in both sculpture and painting but never met in real life; and having a self-appreciation which showed itself in a dignified reticence, less offensive indeed than the occasionally over-bearing self-esteem of M. Angelo.

While painting, as the art of arts, according to the popular estimate of his day was the department in which Lionardo excelled, his nude Leda, for its chaste and almost unimpassioned expression and yet more for its exquisite symmetry especially in the head, is by some admired as superior to the Venus de Medici. As subsidiary to his main art Lionardo always carried a sketch book about with him, in which he copied every striking expression of countenance

and position of men in action which he thought might be of service in his studio; and numberless specimens of these drawings are still preserved. At the age of about thirty-one, leaving Florence to seek an independent field, he entered the service of the Duke of Milan as general supervisor of public works; and the two monuments of his surpassing early skill, in fields most different, are the "grand canal" which draws water from the neighboring rivers for irrigation and navigation, one of the noblest pieces of engineering of the kind in the world, and the fresco of the "Cœna Domini," "The Lord's Supper," perhaps the highest work of Christian art; both of which monuments of the ages Lionardo was executing at the same time. He remained at Milan seventeen years, till A. D. 1499; when the city was taken and ravaged by the French; during which time he opened an Academy where numerous pupils learned his style of art.

His grandest work was executed in the last years of his sojourn at Milan; between A. D. 1497–9. The painting, ordered by the Duke of Milan, was done in fresco on the wall of the refectory in the Dominican Convent. An incident which occurred in the latter part of the period of two years during which it was in progress, strikingly illustrates the character and method of the great artist. The prior, annoyed at the long interruption to his use of the room, after frequent reproaches of the artist, complained to the duke of his dilatoriness; stating that he would sit all day, pondering and doing nothing. In reply to the duke's inquiry about this, Lionardo wrote as follows, "Men of genius are sometimes producing most when they seem to be laboring the least; their minds being occupied in the elucidation of their ideas, and in the completion of those conceptions to which they afterwards give form and expression with the hand." He then added that he was "still in want of two heads." One of these, the Saviour's he said he "could not hope to find on earth;" while "he had not yet attained the power of presenting it to himself in imagination with all that perfection of beauty and celestial grace which seemed to him to be demanded for the representation of the Divine Being incarnate." The second head wanting was that of Judas; of which, he said, he "did not think it possible to imagine features that could graphically render the countenance of a man, who, after so many benefits received from his Master, betrayed his Lord and the Creator of the world." With regard to this latter, however, he said, he "would make diligent search; and if he could not do better after all his effort, there would still remain to him the head of the impertinent and annoying prior." The duke relished

the joke; and the prior was careful not to give further occasion for such an immortalizing of his visage.

Lionardo's study of this grand scene represents Jesus sitting as the central figure, with downcast eyes, in the act of saying, "One of you shall betray me." On his right sits first, grieving John, with hands clasped, turning to Peter who is whispering to him; second, suspicious Judas, clutching the bag in his hand on the table; third, impulsive Peter, reaching forward behind Judas to whisper to John; fourth, cautious Andrew, starting back with horror, having both hands raised; fifth, stern James the Less, reaching one hand behind Andrew to press Peter forward in his inquiry; and sixth, guileless Bartholomew, standing and straining forward as he leans on the table as if to understand better what is passing. On Christ's left is, first, doubting Thomas, standing behind and appealingly raising his finger as if saying, "Is it I?" second, conscientious James the Greater, throwing himself back and advancing his hands, as if exclaiming that such treachery was impossible; third, anxious Philip, tossing his head wildly forward, and striking his hand on his breast as if passionately averring his innocence; fourth, astute Matthew, reaching his head from Christ towards the two disciples beyond him, and having his hands stretched towards Christ as if informing them of Christ's remark; fifth, tragic Thaddeus, turning away his head and flinging out his arm as if incredulous that one could be so base; and sixth, nervous Simon, reaching his head and hands towards Matthew as if asking farther explanation of Jesus' meaning.

Returning after the French invasion of Milan, about 1500, to Florence, Lionardo was warmly received. Brought into contact, here, with M. Angelo, who was now rising to fame, and whose overbearing disposition offended his self-respect, Lionardo engaged in few public works. The most note-worthy is his Cartoon, never put into colors, of the "Struggle for the Standard," in which the contending soldiers and horses seem alive in their dashing fury; and his portrait of Mona Lisa, a most exquisite embodiment of an intellectual female head. After about fourteen years at Florence, during which he made occasional visits to Milan, he was induced in 1514 to visit Rome. Here several orders were given him; but some disparaging remarks of the Pope offending his sensitive nature, he retired, and went to the Court of Francis I. of France, then temporarily at Pavia, south of Milan; whom he followed to Paris. Old age had now enfeebled his powers; and, aside from training a few pupils to his

method, he accomplished comparatively little in the five remaining years of his life. He died near Fontainebleau in 1519.

The characteristic excellences of Lionardo's method were his extraordinary care and delicacy of taste in design, which made the posture and expression of his figures the happiest conceivable; the matchless symmetry and anatomical correctness of his drawing; the almost faultless gradation of colors in shade and tint which made him the father of chiaroscuro; and the labored finish of every part of his work, so that no touch could afterwards be given without marring the previous work. The only portion of his voluminous manuscripts which have been published is his "Treatise on Painting," which has been translated into German, English and French, and of which Mrs. Jameson says that it is "the foundation of all that has since been written on the subject, whether relating to the theory or the practice of the art;" and also a collection of extracts from his philosophical writings published as late as 1797 in Paris, of which the learned Hallam says, "The discoveries which made Galileo, and Kepler, and Maestlin, and Maurolycus, and Castelli, and other names illustrious, the system of Copernicus, the very theories of recent geologists, are anticipated by da Vinci within the compass of a few pages." Lionardo was pre-eminently the scholar artist; the monuments of whose perfected genius are few in numbers, but whose genius itself has awakened thousands to the love of art.

The second of the three great masters, Michel Angelo Buonarroti, was born of noble parentage, at the Castle of Caprese in the then Commonwealth of Florence, A. D. 1474. His nurse was the wife of a stone carver; and when but a boy he delighted in drawing and moulding, neglecting his school for this employ. A pupil of Ghirlandaio introduced him to this able painter; and soon he showed his ability by copying a print of St. Antony beaten by devils, coloring with great skill the animals introduced. His father, who at first thought it a degradation, yielded at last to his son's persistent bent and put him for three years, from fourteen to seventeen years of age, under Ghirlandaio; during which time drawing and coloring were his studies. At this era, about A. D. 1491, Lorenzo di Medici was making his collection of antiques dug from the ruins of Rome and other cities of Italy; and his garden adorned with them was thrown open to the public. Here Angelo's boyhood love for sculpture came back upon him. His first attempt, the copying of a laughing faun, so pleased the duke, that he took him into his palace, giving him a room and maintenance. Lorenzo died A. D. 1492; but his son continued

his patronage. Angelo persevered, copying several antiques, among others the sleeping Cupid; but began also to make original studies producing his Pieta, now in St. Peter's at Rome, and afterwards his David, now in the piazza of the Grand Duke at Florence.

It was during this period that Angelo gave an effectual reply to the pretentious critics who disputed the power of modern sculpture to equal the ancient. Privately executing a statue, he broke off one arm and concealed it in his room; while he engaged the gardener to bury the statue. After some days the gardener professed to have found a buried statue; the critics gathered to the place and saw it exhumed; it was cleaned and set up and universally declared to be a matchless relic of ancient Grecian sculpture, the only regret being the lack of the lost arm. When his opponents were sufficiently committed, Angelo brought out the fresh cut arm, and showed by the perfect fit of the fracture, that the two were made by the same, and that a modern hand.

At this time, when about twenty-five years old, Angelo, was called back to his second art; being directed to prepare a cartoon for a historical painting to be executed on the side of a hall in the Ducal palace opposite that for which Lionardo prepared his design. Neither of these designs of the two great artists were executed, political agitations preventing; but both had their enthusiastic admirers. Almost immediately the artist's genius was recalled to sculpture; as he was called to Rome by Pope Julius II. to design and erect a magnificent mausoleum; whose proportions were to be so grand that its execution was finally deferred till the completion of St. Peter's. The only part of this master-piece of art in sculpture ever completed was the Moses, already noticed. Its study, however, gave a direction to Angelo's mind, which made him aspire to comprehensiveness like that of Lionardo; until he became pre-eminent in all the three arts of design as well as cultured by the study of music and poesy. The grand conception of the mausoleum still lingered in his imagination amid all his future labors; and the aspiration to complete it filled up many stolen hours of future employ.

Julius now insisted on employing Angelo to fresco the ceiling of the Sixtine Chapel in the Vatican Palace; the sides of which had already been covered by the ablest artists of the former generation. The artist reluctantly yielded, since the whole range of his study and practice must thus be changed; but when he consented his whole soul was thrown into his new employ, and in twenty months that entire series of matchless conceptions were finished by his own single

hand; first the Six days of Creation, and events till the Deluge, including the Temptation, Fall and Expulsion from Eden; then leading incidents in the time of Moses and the Prophets, closing with the contrast between the frenzied Sybil and the inspired and holy seer. Shutting himself up alone in the church, having to repaint a portion because through inexperience his mortar was too damp and the colors quickly faded out, surmounting every obstacle, he triumphantly finished the entire work. Never had such unearthly scenes been made so real, never such bold outlines sketched, and never pictured if conceived such light and shade, sunlight and cloud, chaos and restored earth, Paradise brilliance and infernal gloom, man in his perfection and fiends in their supernatural dread. The impatient Pope insisted again and again on the temporary removal of the scaffolding that he might anticipate the effect of the completed works; while Raphael, then in his prime at thirty years of age was in ecstasies of unselfish admiration; and exclaimed that he thanked God "he was born in the time of Michel Angelo Buonarroti!" The entire chapel was now covered, except the end opposite the entrance; reserved still for the greatest triumph of Angelo's genius, the Last Judgment; the most thrilling work of passion in the history of Christian art, as Lionardo's Last Supper is the first to claim intellectual admiration.

Under three succeeding Popes Angelo was employed on inferior work, chiefly as architect and engineer; when about twenty years after he had painted the ceiling of the Sixtine Chapel he was called to fill up the vacant end. His Last Judgment was conceived and begun; but, stolen hours spent in designing his favorite ideal the mausoleum for St. Peter's, delayed his work so greatly that it was not until eight years later, on Christmas day A. D. 1541, that Paul III. could open the Chapel and admit the expectant lovers of art. During this long delay the Pope often visited the artist to encourage him at his work; he criticised, but without any effect on the independent artist, the nudity of the figures; but he was careful not to make the mistake of some of his predecessors in assuming any tone of authority towards the high spirited master, whom for forty years and more the world had acknowledged monarch in the kingdom of art. The Pope's master of ceremonies, annoyed that his petty reign in this part of the Vatican was so long interfered with, attempted remonstrance; but the next day he found his unmistakable portrait borne by one of the lost in the infernal regions, with asses' ears on his head and a serpent twined about his body. The Pope came to beseech the despot-in-art to relieve his victim from such an immortality; but

the tyrant replied to his august intercessor, "Though your Holiness be empowered to release a man from purgatory, that jurisdiction does not extend to those once doomed to the lower prison-house of hell." Five years after the completion of this picture, at the age of seventy, the artist was directed by Paul III. to superintend the erection of St. Peter's; the character of which employ has been presented under the subject of architecture. It was while laboriously engaged in this great work, that, eighteen years later, at the age of eighty-eight, M. Angelo ceased his work on earth.

The special characteristic of M. Angelo as an artist was the grandeur of his conception and boldness in attempting whatever he conceived. As this made him seek the majestic in sculpture and the grand in architecture, so it made him in painting aspire after a comprehensiveness of theme, an impassioned energy of action, and a vividness in coloring that had never before been united in any painter. The groups in the ceiling of the Sixtine Chapel are, taken together, a complete epic, thrilling in each part, and as comprehensive in their combination as the works of Homer or Milton; each picture telling a story which a book would be needed to unfold, and the group making a volume of impressive instruction and of stirring appeal. This characteristic made M. Angelo impatient of the restraint and labored kneading of oil colors; for he wished to lay on his hues and tints at a dash of the brush, as he struck out his outline by a sweep of his pencil. His temperament made him overbearing towards rivals, and terribly severe on disparaging censors; yet he was genial and generous to appreciative critics, and to artists who loved their art and longed to excel in it without dreaming of rivalry.

The third of the galaxy of great masters growing up together, Raphael Sanzio, born A. D. 1483 at Urbino in the Roman possessions, was early trained to the practice of art by his father, who was an indifferent artist; and at twelve years of age was placed under the instruction of Perugino, with whom he remained about eight years. After leaving this master, Raphael practiced his art for two or three years in Perugia; showing the indications of natural loveliness of conception and execution which afterwards became his characteristic, but following the stiff ascetic style of representation belonging to the Umbrian School. In 1504 he visited Florence; when a new world at once opened to him in his profession. The cartoons of Lionardo's "Battle for the Standard" and the "Surprise of the Soldiers bathing" by M. Angelo were just opened for public inspection; they awakened in young Raphael, now twenty-one years

of age, an idea of art entirely new, and inspired a burning ardor to acquire the same style. Self-reliant he soon after repaired to Perugia; but soon returned again to Florence, where in three years he painted about thirty altar-pieces which successively grew into likeness to the style of Lionardo. During this period he attained that quiet loveliness which characterized his portraits and his Madonnas; the most admired of which were executed at this era.

His Florentine reputation soon reached Rome; whither Pope Julius II. hurried him, and where A. D. 1508 he commenced that career of transcendent excellence in art, which, though cut short at thirty-seven years of age, made him not only one of the most successful, but the most voluminous of artists. In Umbria under Perugino he had surpassed his master in the dreamy supernatural air given to saints; at Florence he had rivalled Lionardo in giving liveliness and naturalness of expression and action to beings human, yet of surpassingly exquisite mould; and now at Rome studying the nude, he caught the energy and vast breadth of conception of M. Angelo, adding to it a classic grace borrowed from study of the ideals of the ancient Greeks: and in this third and climactic style his manly genius and womanly heart so won on his great fellow-artist that M. Angelo himself magnanimously commended Raphael to the Pope as his superior in his own chosen art.

Immediately on arriving at Rome the frescoes known as the "Stanze" or chambers of Raphael, embracing three chambers of a saloon in the Vatican palace, were commenced; his design being to present the collected results of the history of the Church. In the first chamber the four walls are covered with those master-pieces, "Theology," or the "Dispute as to the Sacrament;" "Poetry," or "Parnassus;" "Philosophy," or "The School of Athens;" and "Jurisprudence." The collection of the robed and mitred dignitaries in the first, partakes, and not without propriety, of Raphael's early Umbrian style. As he was studying the second and third Raphael was visiting M. Angelo's progressing work in the Sixtine Chapel, and was catching those ideas which gave freedom and boldness to his grouping and classic symmetry and grace to his figures; and the "Parnassus," and yet more "The School of Athens," have been the admiration of critics and artists of succeeding generations. The fourth, "Jurisprudence," though less attractive to most beholders, is, as an exhibition of the intellectual comprehensiveness of the artist, a superior work; representing Justinian offering his Code and Gregory his

Decretals as the embodiment of the Science of Civil and Ecclesiastical Law.

From this time the private orders that crowded upon Raphael were numberless. He became the head of a school of young artists some of whom so caught his style that he employed them to work up his designs. His sketches and unfinished drawings, and especially his completed cartoons, some of which were so masterly in mere pencil outline that after his death at Rome A. D. 1520 they were regarded more valuable without color than if finished by his pupils, are among the choicest labors of Raphael's life. Though not like Lionardo and Angelo a master in every art, Raphael showed skill in sculpture and architecture; but his title to the third place as a complete master is his comprehensiveness in the art of arts. In painting one department after another was mastered; while success in each new field did not lead to neglect of former acquisitions. His method of design was to unite the ideal with the real; as when he drew on a barrel-head the exquisite form of the peasant mother and her child, which then by future study he recast for his Madonna della Seggiola. Of his general habit of conception he thus writes to a friend: "To paint a figure truly beautiful it might be necessary that I should see many beautiful forms, with the further proviso that you should yourself be near to select the best; but seeing that good judges and beautiful women are scarce I avail myself also of certain ideas that come into my mind." Yet more, as Mrs. Jameson and other biographers have well urged, Raphael was pure in morals: and nothing could more establish the fact, that no artist, however great in genius, can be a leading master, unless, as Cicero declared of the orator, "he be a good man," than the rise together of three men like Lionardo, Angelo and Raphael; all most laborious and comprehensive masters while yet so unlike, and all capable of such labor and such attained skill because none of their powers were weakened and wasted by sensual indulgence.

Sect. 8. The Schools of Northern Italy as Influenced by Lionardo, and of Central and Southern Italy by M. Angelo and Raphael.

It was to be expected that the three great masters of the early period of the sixteenth century would exert a marked influence on the schools of painting throughout Italy; yet, as their excellence was only the culmination of an improvement that had been steadily progressing for two entire centuries, the distinct marks of that influence are relatively less palpable than those impressed by some of

their able predecessors, especially by Giotto. The traces of this influence on different schools is quite unlike; the Florentine having already reached a standard which could only receive, as it were, a finishing touch from its own three foster sons; the Umbrian, which had succeeded to and virtually been the developed perfecting of the Sienese, having received in Lorenzo de Credi, the contemporary and partial pupil of Lionardo, its highest possible improvement; while the Venetian School and the Schools of Northern and Southern Europe, more out of the centre of this gradual advance, were in a condition of development better fitted to receive a new and decided forward impulse.

The character of the influence exerted by these different masters was widely dissimilar. Lionardo, the earliest and oldest, was preeminently a man of science and culture; as a teacher imparting principles which gave a higher intelligence and a more finished execution to artists already able, who did not think of making his works a model; while his own self-respect and his sense of gentlemanly courtesy made him averse to pressing himself into notice where more forward and overbearing men might jostle him in his path. Lionardo's influence was seen in the general spirit of desire for universal culture awakened among the artists of Italy, France, and even of Spain and Germany through the products of his pen as well as of his pencil and brush. Besides this general influence he was the virtual founder at Milan, the seat of his chief labors, of a school of finished artists; chief among whom were Luini and Oggione, who executed far more works than their master, and in a style so perfectly his that no critic could have distinguished the works of the teacher from those of the pupil. In France, also, Lionardo left an impress which will be remarked in considering the history of French painting.

Michel Angelo was a man of towering genius rather than of labored culture; who alike by his great intellect and his great will was bound to be chief wherever he moved; unfitted to be a winning and patient teacher, yet revealing in his works new methods to such an eye as Raphael's, so that without establishing a school or receiving pupils he had imitators beyond even professed instructors. His grandeur of design and intense action naturally aroused to new life the now waning Dramatic School of Florence; while it was the only power mighty enough to break in upon the stereotyped pomp of the Venetian School, whose leaders, Titian, Giorgione and Tintoretto made henceforth M. Angelo's drawing to underlie their gorgeous coloring.

Raphael, on the other hand, was of almost feminine spirit; learning from every master he met, and never thought of as a rival even by M. Angelo, who confessed Raphael's superiority to himself in themes of gentle grace and Christian loveliness; acquiring everything by intuition, and unable to impart to another the principles of his own success, since he did not himself know their reasons; yet surrounded by admirers and attracting especial y pupils of genius kindred to his own, who by intuition like his own caught his style. In the Florentine School Fra Bartolommeo was his admirer; in the Venetian Fra Sebastiano was his contemporary and copyist; and in the Sienese Francesco Francia almost adored him as divine. At Rome Raphael surrounded himself with kindred spirits; who, becoming under the name of pupils masters of his style, were employed by him in working up his designs; and who after his early death established what came to be called the Roman School. At Naples one of Raphael's pupils became the head of the modern Neapolitan School; followed by imitators of such genius and popularity among the Neapolitan people that Raphael was as truly the head of the Neapolitan as of the Roman School.

Commencing at the North and taking a more particular view of the influence of the three great masters, five leading schools claim notice, and many of the ablest Italian artists pass in review. The first in point of both place and time is Parma with its incomparable artist Correggio; the acknowledged leader in a style of chiaroscuro which prepared the way for modern landscape painting. Correggio took his name from the little town near Modena where A. D. 1493 he was born and where also A. D. 1534, at the age of forty-one years, he died. Studying his art at Mantua some works of Lionardo da Vinci and of Raphael had more influence than his teachers in giving character to the finish of his style; while his own genius in private practice gave cast to his design and general method of composition. It was when standing before one of Raphael's master-pieces that Correggio is said to have exclaimed, "Anch' io son pittore," 'I also am a painter.' His three main excellencies were breadth of view, especially the immeasurable expanse of sky opening between his figures; a power of gradation in light and shade and in the execution of chiaroscuro uniting that of M. Angelo in form, of Raphael in expressiveness, and of Titian in hue. Fuseli styles him "the father of landscape;" and says that he "attained the climax of harmony" by securing a "unity of the whole" in his pieces, and by his chiaroscuro which was "his great power." Called in 1518 to Parma, this city

became the scene of his principal life-labors, and the seat of a school made up, not of pupils, of which he had none, but of imitators. A convent, a church, and the cathedral at Parma are the treasure-houses of his great works in fresco; the Ascension of Christ in which the aerial form of Jesus seems to shoot upward in the clear azure while his apostles float on clouds around, and the Assumption of Mary with angels hovering in the apparently boundless heavens above her, are the master-pieces of his power in breadth of space, gradation and brilliance of lights, and foreshortening. A series of classic themes executed at Mantua, and easel-pieces distributed in almost all the chief galleries of Europe bear almost equal testimony, so uniformly glowing was his conception and so finished everything he touched, to his surpassing skill. In 1530 Correggio, after a short and unobtrusive life at Parma and Mantua, retired to his native town; leaving behind at Parma imitators who founded a school. Among these Parmigiano became most eminent; of whose master-piece, "Moses breaking the Tables," the English poet Gray said, "that, though many years had elapsed since he saw it, the Moses of Parmigiano had inspired his Welsh bard." In the later Eclectic School he was regarded as the model for grace; which he showed in portraits.

In the Tuscan Schools the artist most eminent in characteristics borrowed from the great masters was Fra Bartolommeo, born A. D. 1469 and deceased A. D. 1517. He first studied Lionardo's style and attained especial grandeur of conception. Being religiously inclined and fond of learning he became a monk when thirty-one years of age. Raphael succeeded in drawing him out of his seclusion, and he visited Rome; but becoming disheartened among such rivals as M. Angelo and Raphael he retired soon to Florence. Spurred by the impulse of apparent failure, he painted his nude St. Sebastian; which together with his "Madonna della Misericordia" at Lucca have stamped him as one of the original as well as ablest of Florentine artists. With less judgment most Tuscan painters chose M. Angelo as their model; and utterly unable to apprehend the spirit that animated his great mind they verified the remark of Fuseli that M. Angelo lived to see his style perverted in the Tuscan as well as in the Venetian School.

It was in the Venetian School, and especially in the three masters Giorgione, Titian and Tintoretto, to which list may be added Paul Veronese, that the most striking illustration of the influence of the three great masters is to be seen. Prior to this age the Venetian painters, absorbed wholly in the effort at excellence in color, in de-

sign attempted nothing but those same "fine old Venetian gentlemen, all of the olden time." The genius of M. Angelo and of Raphael awakened other ideas of men and of women; and soon the grand and almost tragic action of the former, and the expressive loveliness of the latter, began to be aspired after.

Giorgione, born 1477, properly named Barbarelli Giorgio, was trained under Bellini, the last of the old Venetian masters, stiff in form and gorgeous in hue. The study of Lionardo's works led Giorgione to attempt boldness of outline, action and expression in his figures; to which was added a graduating of his darker colors still rich and gaudy, and a yet finer gradation in his lighter colors in sky and cloud, which made him the leader in an entirely new style of Venetian painting. He died at the age of thirty-five, A. D. 1511, of the plague; leaving numerous frescoes which have since perished, also portraits still preserved, and his master-piece, "The Infant Moses" now in the Pitti Palace, Florence, to bespeak his claim as the renovator of the Venetian School.

Titian, or Tiziano Vercellio, born the same year with Giorgione, remarked when a child for his taste in coloring with the juices of flowers, placed at nine years of age in the study of an indifferent artist, soon found his way into the school of the Bellini. Associated however with Giorgione he caught the impulse of his genius; and for years the two artists were so perfectly one in their style that at Giorgione's death Titian finished his pictures left incomplete. Through a direct or indirect influence coming from M. Angelo, Titian began to give to his compositions a breadth of field and an openness and clearness of back-ground which made him even more truly than Correggio the author of perfect landscape as far as this branch of painting was attained by Italian artists. He lived to be ninety-nine years of age, making Venice his chief home with short residences at Ferrara, Bologna, Mantua and Rome.

In portrait painting Titian was characterized by a happy choice of attitudes and a freshness of expression; which, added to the exquisite finish of hair, cheek and every feature, made him a favorite with royal sitters. Charles V. of Germany employed him no less than four times to paint his likeness, saying that he esteemed it his highest honor to be handed down to posterity by the skill of such an artist; while nearly all the potentates and princes of Southern Europe sought for themselves the same honor. In classic, mythological and ideal subjects Titian's coloring had a charm indescribable. His failure was in form; brought to view by M. Angelo on

Titian's visit to Rome, when he exclaimed, "What a pity that Titian does not draw as well as he paints," and declared that "Titian would have been the first painter in the world had he only been early grounded in correct drawing." This judgment was passed by the ablest master in bold outline with the pencil; and it is at once a sad comment on the impossibility of universal perfection and a striking confirmation of Lionardo's teaching as to the fundamental importance of drawing, that the most skilful colorist of his own or of any age should not be able to atone for this fault by all other excellences. In landscape Titian sought to picture ideal oftener than real scenes; in which he attained such a power in making sky and earth glow with soft hues and tints that Kugler calls his style "the glorification of earthly existence." Fuseli, moreover, gives him this credit for general excellence both in real and ideal scenes; "landscape whether it be considered as the transcript of a spot, or the rich combination of congenial objects, or as the scene of a phenomenon, dates its origin from him." Living to so great an age and always industrious, painting with flower-juice at nine years of age and executing with trembling hand a dead Christ still preserved in Venice at ninety-nine years, the works of Titian are as numerous as they are in themselves valuable.

Titian's fault made Tintoret; while his excellences made many artists. That fault was jealousy of rivalship, especially in his pupils. Jacopo Robusti, called "Tintoretto," or the little dyer, from his father's occupation, born A. D. 1512, entered at an early age the studio of Titian; from which he was not long after dismissed with the master's stinging remark, "That he would never make anything but a dauber." Conscious of genius, and also determined to show his powers, Tintoretto procured a room and trained himself to such a degree of perfection that he dared to place over his door the inscription, "Il desegno di Michel Angelo; il colorito di Tiziano;" the drawing of Michel Angelo, the coloring of Titian. He studied perspective and foreshortening by suspending plaster-cast models in every conceivable position and then drawing them; and he obtained chiaroscuro by suspending those same models at night, and painting their shadows cast by lamplight on a richly colored back-ground. With a rich and almost rampant imagination in design and composition, retaining the gorgeous Venetian coloring, and adding the power in drawing and shading just mentioned Tintoret fascinated the more lively and fantastic of the Venetian people.

Tintoret's reputation tempted him into extravagant fancies in

design; as well as into the more legitimate love of showing his power in overcoming difficulties in form and color, as in foreshortening and deep shadows. A weak ambition led him to make his Paradise the largest canvas ever covered with an oil painting; eighty-four feet three inches broad and thirty-four feet high. Though painting in oil he finished his pieces with such amazing rapidity that his early nickname received the addition "Il furioso Tintoretto." The superior merits of the finer works of his best days, when a chastened taste controlled him, are acknowledged by all critics. His inventive genius in landscape-painting has called forth this remark of his great admirer Ruskin, "There is not the commonest object to which he will not attach a range of suggestiveness almost limitless; nor a stone, leaf, or a shadow, nor anything so small, but he will give it meaning and oracular voice."

The last leader in the Venetian School was Paul, called Veronese from his native city Verona. Born A. D. 1528, he came as a youth to Venice, studied the works of Titian and Tintoret, and while copying many of their excellencies went back in the main to the style of Bellini and the earlier Venetian artists. While Titian excelled in the attitude and expression of his figures, as well as in open background, and while Tintoret sought dramatic action in his figures united to a more varied alternation of shades in his perspective, Paul Veronese delighted in architectural relief rather than open sky. This feature introduced into his first great work in the church of St. Sebastian at Venice, complimentary as it was to traditional taste, called forth such popular applause as to confirm the artist in his chosen style. Want of extended study made it stereotyped and hence faulty in design. In every class of composition, in Scripture or historic themes, as his figures are all Venetian in costume and features, so his magnificent architecture is all of the Italian villa or Roman colonnade style favorite in his day. The last of his line, failing in comprehensiveness, Paul Veronese became a leader in the decline of the Venetian school.

Passing from these schools of Northern Italy, on whose style all three of the great masters seem to have exerted an influence, we find the rising school, called the Roman, succeeding to the Umbrian as the Umbrian had succeeded to the Sienese, to be stamped with the special impress of the most winsome of the three, Raphael Sanzio. Lionardo, though urged, declined all offers for paintings at Rome; Michel Angelo worked alone, admitting no hand to touch his works and no mind to share his conceptions; but Raphael's studio was

surrounded by loving imitators, whom he delighted to employ in working up the glowing conceptions which his fertile imagination traced in outline and conceived as finished with such distinctness of apprehension that he could convey his thoughts to another mind and see his ideal realized by another hand.

Among the employées of Raphael, the one who during the life of his master most perfectly copied his style was Giulio Pippi, born 1492, died 1546; called Romano as the virtual head of the new or Roman school. He not only worked upon the designs of Raphael while he was living but after his death was employed to finish some of his sketches left incomplete. Four years after Raphael's death he removed to Mantua; where he became engaged as architect as well as painter. While under Raphael and at Rome the classic models both as to design and form had been Romano's study, and his excellence in recasting them gave origin to his name; but, released from this guiding and chastening influence, a coarse elegance, like to that of the rude native as compared with the Greek-cultured Roman, made his name yet more appropriate. A host of followers were attracted to him; whose style being a virtual return to the perverted classic, soon caused the decline of the Roman school.

At Bologna and its neighboring towns grew up three followers of Raphael who became associated models in the future Eclectic school of the Carracci. These were Primaticcio, Tibaldi, and Nicolo dell' Abate. Primaticcio, trained under two pupils of Francia Raphael's bosom friend and counterpart, associated with Giulio Romano in many of his extensive works, employed then by Francis I. at Fontainebleau near Paris, like Giulio labored to attain Raphael's comprehensiveness in invention, while in execution he was seldom finished. Tibaldi, a pupil of the same teachers with Primaticcio, who practised his art in Spain as well as in Italy, was distinguished for a decorum in design and a skill in laying on his foundation colors, which gave him the merit of a master in the succeeding Eclectic age. Nicolo, a native of Modena, an associate of Primaticcio in many of his larger works, displayed a simple, unaffected beauty which seemed to the Eclectics the embodiment of their own idea of the excellencies of all the best masters combined.

While pupils of Raphael in several cities gave their master's cast to different schools, no less than three of them found their way to Naples; one of whom became the virtual founder of the modern Neapolitan school. Penni, a confidential pupil of Raphael's, going to Naples after executing a few pieces in the true Roman style, exact

in form but lacking expression, died early. Andrea Sabbatini, of Salerno, established in Naples before Raphael became noted, visiting Rome, worked with him for a while; when, returning A. D. 1513, he became the virtual head of the new Neapolitan school. In him and his pupils the freedom and naturalness of drawing belonging to Raphael's style at Florence, and the winning sweetness of expression characterizing his best days, became the model for imitation. Yet a third pupil of Raphael, Polidora Caldara, became in this new school a master in the later and easily perverted style of Raphael; a study of the antique in form with a freedom and picturesqueness of drawing and grouping. The characteristics of these two artists were handed down by two or three generations of Neapolitan artists.

Sect. 9. The Spanish Schools; formal and mystic in style; historically associated with the School of Southern and Central Italy; Culminating in Velasquez and Murillo of Seville.

The history of art, like the life of the artist, is peculiarly unmixed with the transitions of nations, the conflict of political aspirants, and the strifes and struggles of men in civil society, which so fill up the thoughts and the employ of the mass of mankind. In the whole history of the Italian painters from Giotto to Raphael there has been scarcely occasion to allude to the fact that the Italian States were rent by civil factions and devastated by foreign armies; that the Northern States were now elective, now hereditary in the succession of their native rulers; that now France, now Germany, now Spain brought one and another province under its sway; that Rome itself saw Popes now dethroning emperors and kings and now dethroned by them; and that the South of Italy was but a dependence of Spain. Over the Italian artist's studio the storm of foreign war, and the tornado of civil revolution swept almost unheeded; for religion was always at hand to patronize, and rulers, from taste as well as policy, vied with each other in showing their devotion to art. When war brings in rulers that undervalue art, it may suffer from lack of patronage; but its life is not dependent on forms of political organization.

The history of painting in Spain shows that while the demands of religion raised up native artists in every age it was the power of Spanish nationality that at last dignified Spanish art. It was not until long after painting had been aspiring to and attaining perfection in Italy, not until such princes appeared as Ferdinand and Isabella, and especially Charles V. and Philip II. whose two long reigns from 1516 to 1598 devoted to art as well as to general progress made

Spain a united and powerful nationality around which political glory and grandeur began to gather, that true genius in art was developed and fostered, and Spanish artists like Velasquez and Murillo arose who challenged the homage of all Europe. While both these great princes were enamored of art and devoted time and money freely to the collection of paintings and to the encouragement of artists, it was as late as A. D. 1563 that Madrid was made the national capital and the first stone laid in the foundation of that gloomy yet grand old convent-like palace, the Escurial, destined to be the receptacle for generations of the best works of Spanish artists; with whose general cast the aspect of the building has proved to be in admirable keeping.

In Spain a truly native style, the offspring of a special taste, has prevailed from the earliest times; and though successive influences from Italy and Germany modified the methods of some of the best Spanish painters, it had no power to change the native style, which reached its climax of perfection in Velasquez and Murillo. The chief source for the authentic history of Spanish painting is the work of Pacheco, the father-in-law of Velasquez, published at Seville in 1649; the heterogeneous yet rich reminiscences of a garrulous and self-complacent old artist, too proud of his great son-in-law to conceal it, yet full to overflowing of those details of methods, of the home-life of artists, of the comic relief as well as of the dramatic grandeur of art history, which forms the richest store-house of principles as well as of facts. Pacheco is a living embodiment of the spirit of Spanish art; praising the idea of drawing from nature, but boasting of his own authority as an officer of the Holy Inquisition which required him to visit the studios of artists, galleries of paintings and print-shops, and to see that nothing not in accordance with the rules of the Catholic faith should appear in the representations made by artists of sacred subjects; condemning as the duly commissioned Inquisitorial censor the study and execution of the nude, yet criticising with a double-tongued logic like this, M. Angelo's license in his Last Judgment, in picturing "the angels without wings and the saints without clothes;" for "although the former do not possess the one and the latter will not have the other, yet since angels without wings are not known to us, and our eyes do not allow us to see the saints without clothes, as we shall hereafter, there can be no doubt that this representation is improper;" and finally citing as a warning the case of a painter at Cordova who was subjected to a severe penance because he had painted the blessed Virgin "with a hooped petticoat, a pointed

spencer, a saffron-colored head-dress, pantalettes and a fringed doublet."

Of the early history of painting in Spain we have only fragmentary statements. In the earliest era traceable a style of painting prevailed in Aragon with its commercial towns over against Italy, Byzantine in style, like that early prevalent in Venice; while in the central towns of Aragon and in Castile the inland State, the old Gothic style, similar to that of ancient Lombardy, held sway. Artists of some note existed in the fourteenth and even in the thirteenth century; one of whom is mentioned as employed in England as early as A. D. 1257. It was of course in the North of Spain that the mediæval Gothic and the earliest improved Christian painting was executed; since the Southern portion of this storied land was under the control of the Moors and of Muhammedan art until nearly A. D. 1500. The chief early schools were located at Saragossa, the old inland capitol of Aragon, in the North-east of Spain; at Valencia on the Mediterranean coast, a school which seems to have been transferred at a later day Westward to Toledo and Madrid in the heart of New Castile; and lastly at Seville in the extreme South, in old Andalusia, so near to the Moorish cities of Cordova and Granada as to breathe the intellectual atmosphere of the former and the art inspiration of the latter seat of Arabian greatness.

The School of Saragossa originated probably early in the fourteenth century, when Pope John XX. erected the metropolitan Church of that city into a cathedral, which Torrente and his pupils decorated; whose style in altar-pieces and fresco, after the Gothic or Romanesque of Lombardy prior to Giotto, can be traced for two centuries. In the beginning of the sixteenth century, while the great masters of Italy were living, the influence of resident German artists prevailed in this School; who added the sombre aspect of Spanish ideas to the vivid naturalness of action peculiar to the German painters. A striking illustration of this is found in the statement of Bermudez, a Spanish writer on art; who says of the artists of this period, "The coloring is not so bright as that of the old German painters; but there is in it a sort of softness like in effect to a veil thrown over their pictures." Yet later an Italian spirit prevailed at Saragossa.

The School of Aragon and Castile proper began with Pedro de Aponte, painter to Juan II. of Aragon at Saragossa; who followed Juan's son Ferdinand V. when by his marriage to Isabella of Castile the two kingdoms were united and the seat of the Court removed to Castile in 1479. He was succeeded by an artist trained in Italy named

Belegret, who excelled in fresco. Charles V., a little later, brought in a Court influence which attracted the best Italian artists to Castile, while it also gave to native artists an inspiration to excel in that School of art with which the monarch had become enamored during his sojourn in Italy and his acquaintance especially with Titian. A most decided Italian cast was introduced by Berraguete; who in 1503 was a pupil of Michel Angelo at Florence; and who on returning to his native country was employed by Charles V. in the triple character taught by his master, to adorn as architect Madrid and Granada, while as sculptor he surmounted the gates of Toledo with statues, and enriched the gallery of the Escurial with paintings. Titian, also, either in person or by his paintings, was made to visit the Court of the Emperor whose portraits executed at Bologna had won Charles' admiration; and the Escurial Palace at Madrid is now rich with Titian's finest works. The pride of this School was Morales, born about A. D. 1500; called "the divine" by his contemporaries, because of the celestial languor which he threw into his pictures of the suffering Jesus and of his "Madonnas dolorosas." Pacheco and others criticise the stiffness of his drawing, but compare his rich and mellow coloring to that of Correggio; while the expression he threw into Christ's features is styled a "sublime spirit of self-sacrifice and resigned love." Morales lived to a good old age, painting from a love of art, and died A. D. 1586, never enriched by his profession; for when Philip II. in 1581 said to him, "You are very old Morales;" he replied, "Yes, and very poor." With him disappeared the truly religious painters of Spain, and the school of old Aragon and Castile.

At Valencia, an ancient seaport of large commerce with the Levant, whose Cathedral consecrated A. D. 1492 stands on the site successively occupied by a Roman temple to Diana and a Moorish mosque, the old Byzantine style in painting seems at an early day to have prevailed; a tendency which made the Venetian afterwards favorite. The first artist to break away from the formal and inaugurate the natural style in this School seems to have been Joanes, born A. D. 1523, who though religious in his themes had a style kindred to Raphael's; which is specially remarked in the manly form given to Saul in his martyrdom of Stephen. After him followed Navarette, born A. D. 1526, called "El Mudo," The Mute; because having lost his hearing at three years of age he never learned to talk. In him again, as in the Roman instance cited was illustrated the fact that a special gift for plastic art is bestowed on the deaf, as a special gift for

music on the blind. After having studied under Titian at Venice, returning to Spain, he was employed by Philip II. to adorn the Escurial; where he showed an independence in introducing natural life into sacred scenes, as a dog, cat and a partridge in the Holy Family, and even angels with beards, which shocked most rudely the Church Inquisitors. Unable, however, to undermine him in the royal favor they succeeded in obtaining this provision in his future employ; "the artist shall not introduce any dog or cat, or other unbecoming figure; but all shall be saints, or such as incite to devotion." His confidence in his own power as an artist was brought out, when as a painting of the Last Supper, executed by Titian for the refectory of the Escurial upon being unrolled was found to be too large for the wall and Philip had ordered it to be cut to fit the space, El Mudo by signs begged the king to spare it and place it elsewhere; pledging himself in six months to make a perfect copy of the requisite proportions, or to lose his head if he failed.

It was at once indicative of the liberal spirit of the School of Valencia and of the undying spirit of art in the Grecian race that one of the eminent painters of this School, named Domenico Theotocofiuli, was a Greek; hence called "El Greco." A pupil of Titian, his style was decidedly Venetian, opposed to the bold drawing of M. Angelo, but skilful in grouping and rich in coloring. Pacheco living in his day, says; "When I asked Domenico Greco 'which was the more difficult drawing or color,' his answer was, 'Color.'" The ablest artist of this School was Ribalta, born A. D. 1551. Being rudely treated and called a mere dauber by the artist with whom he was studying, and with whose daughter he had fallen in love, he left for Italy where he studied the style of Raphael. Returning and calling on his old master, not finding him at home but meeting his daughter, Ribalta painted a hasty sketch on his easel. When the old man came home and saw the painting, gazing at it with admiration, he called his daughter and exclaimed with enthusiasm, pointing to the picture, "That is such a man as I would have you marry; and not that dauber Ribalta." Ribalta not only won his bride but became the idol of Valencia for the natural air and winning expression which mark his numerous works.

At Seville four artists were noted for altar-pieces and frescoes in the latter part of the fifteenth century. A generation later Pedro Campaña, born at Brussels A. D. 1503 but educated in Italy, came and settled in Seville, only returning in advanced life to Brussels. This Flemish painter executed, among other works, the Descent from

the Cross in the Cathedral of Seville; whose two truly Spanish characteristics are thus illustrated. When Murillo, young as an artist, stood for hours gazing at this picture, and was asked his reason, he replied, alluding to its life-like expression, "I am waiting till these men have taken down our Lord." Pacheco presents its characteristic of sombre gloominess, when he says, "One would be afraid to be alone with it in a gloomy chapel." To Luis de Vargas, however, is attributed the honor of having founded a higher school of painting in his native city of Seville. Born 1502, he studied in Italy where he early showed a love for the natural. His finest painting is styled "La Gamba," from the exquisitely wrought leg of Adam shown in it. Pacheco has to censure one of his pictures of Christ bearing his cross, because the Divine Redeemer is represented clothed only with a tunic so that much of his form is nude; which feature betrays the artist's yearning to trench on the inquisitor's rule in his love of nature. So sweet and almost Raphael-like was the loveliness of many of his figures, and such was his consequent power with the lovers of true art, that nothing but a Spanish Inquisition could have prevented Spanish genius in art from rivalling that of Italy. Though eminently devout in spirit, de Vargas had that rich vein of humor which is so generally allied with the deepest reverence that it seems to be a part almost of religion; for reverential admiration and respect for the really true, the beautiful and the good seems naturally to call forth the opposite feeling towards the contrary qualities. An affected painter once showing him with great self-complacence a wretched daub representing the crucifixion, and asking his opinion of it, de Vargas, looking intently at it, replied, "that the crucified one seemed to be saying to his torturers, 'Father, forgive them for they know not what they do;'" which expression of de Vargas the stupid artist interpreted as a compliment and reported it with childish delight.

Pablo de Cespedes, born 1538, the Spanish Correggio, is by some made the head of the improved school of Seville. Studying first at home he acquired in Italy the method of Correggio with its breadth of open space, its retreating sky, and projected figures in foreground; when returning he engrafted these new features upon Spanish art. Of him Pacheco says: "De Cespedes was a great imitator of the beautiful manner of Correggio; and he was also one of the best colorists in Spain. The school of Andalusia owe to him the fine tone of their flesh tint, as he has shown in this city of Seville and in his native town of Cordova." Roelos, born about A. D. 1560, was in design and color the Spanish Tintoret. His St.

Anne teaching the virgin Mary, pictures the maiden in a rich rose-colored tunic and a blue mantle studded with gilt stars; while by the mother stands a table spread with refreshments, with a cat and dog sitting near, and by the child a basket of play-things. One of his Madonnas represents the babe Jesus nude, while Mary holds the swaddling band admiring the child before she swathes him.

Next came Pacheco, born about A. D. 1579, more of a critic than an artist; the first in modern times to give a colored tint as a finish to statuary; performing for the sculptor Montañes, the service rendered by the Greek painter Nicias to Praxiteles. Pacheco also had the peculiar merit of a good teacher, the capacity to put a youth of true genius upon the road to greater success than his less gifted instructor; a merit which was realized in his pupils Cano and Velasquez. The two artists named Francisco de Herrera next added to the advancing art of Seville. The father, born A. D. 1576, practiced the bold and vigorous touch which Velasquez adopted and improved. Herrera carrying it to an excess of violence so absurd that he is said to have employed a maid servant with a broom to smear his canvas with the foundation colors. The son, born A. D. 1622, became known in Italy as Lo Spagnuolo dei Pesche, The Fish Spaniard, from his devotion to still life, especially to scenes in which water views and fishermen were introduced. Alonzo Cano, born A. D. 1601, a pupil of Pacheco, was trained entirely at home. His chief study was castes of the antiques; he became a proficient in tinting statuary; while his best paintings were master-pieces of tender sentiment in forms so etherial as to be almost ghostly. With Cano flourished Turbaran, born A. D. 1598, a pupil of Roelos, who painted from nature and excelled in giving grace to drapery. Brought up by Velasquez to Madrid, so much was he esteemed at Court that Philip IV., stopping one day at his studio to examine his work, complimented him with the title "Pintor del Rey y Rey de los pintores," "Painter of the King and King of the painters." The age of the two great masters was now ushered in.

Diego Velasquez, born A. D. 1599, was in early life a pupil of the elder Herrera. The harshness of this master soon drove away his sensitive pupil; not, however, until he had caught Herrera's dashing style of drawing, as a foundation for future excellencies. Entering the studio of Pacheco, the rules of the Academy there insisted upon were just the bridle his bold and independent genius needed. After five years he married his master's daughter; an event which in his treatise, written at the age of seventy years, the old man can hardly

sufficiently congratulate himself upon. "I hold it," he writes, "no disgrace that the pupil should surpass the master. Lionardo da Vinci did not lose anything by having Raphael as his pupil; nor Giorgione Titian; nor Plato Aristotle." At the age, of about twenty years Velasquez had already originated improved methods, some of which Pacheco thus describes, "He kept in his pay an apprentice boy, who served him for a model in different sorts of action and in various attitudes; sometimes laughing, sometimes crying. From him he executed many heads in charcoal; heightening the effect in some by a ground in white or blue paper; working up others in natural colors; and thus he acquired his accuracy in portraits."

In 1622, when twenty-three years of age, Velasquez went to Madrid; but shortly afterward returned to Seville. Invited back to Madrid he painted the portrait of Philip IV. In 1628 Rubens visited Madrid, met and admired Velasquez, and during his nine months' stay imparted to him valuable instruction. The next year Velasquez visited Italy; drew much at Venice, studying especially the methods of Tintoret; went to Rome and studied the works of M. Angelo and Raphael; and returned a comprehensive master, enriched with the principles of the greatest Italian painters, but true to nature in applying them all in his practice. Philip IV. gave him a studio in his palace, to which he had a private key, and in which he would sit for hours to see him work. In portrait, historic and sacred subjects he rivalled the ablest Italian masters; in domestic scenes and still life the Flemish; and in landscape he was the precursor of the best English artists.

In 1648 Philip IV. employed him to visit the galleries and studios of Italy and purchase paintings for the Escurial Palace; a work which called forth his rare merits as a critic as well as an artist; after completing which he returned to Madrid to eclipse his own former fame by yet superior works. At Rome, during this excursion, he executed the best of his works in portrait, that of Pope Innocent X.; and in 1656, at Madrid, he painted that master-piece styled by admirers "The Theology of Art." In it Velasquez represents himself taking the portrait of Margarita, the king's daughter, with her maids of honor around her and a landscape in the back-ground. In linear and aerial perspective, in correctness of shading and local tint, and in the perfectly life-like representation of animal and attendant personages, it stands without rival. Philip IV., so devoted to art and so attached to Velasquez, had complimented one of the

artist's early efforts, a portrait of his Captain-General, by coming into the artist's studio shortly after he had ordered the General to distant duty, and suddenly turning to the portrait as if he had mistaken it for the General himself, exclaiming, "What! are you still here? Did I not order you elsewhere?" When, now, his last and grandest work of art was finished, the king's delight knew no bounds. Taking up a brush, having learned from watching Velasquez something of his art, he painted upon the artist's breast in the picture the cross of Saint Iago, the highest honor in his gift. The royal decoration, still seen upon Velasquez' greatest work, is at once a monument of the genius that called forth the honor and of the value of patronage in calling forth genius.

Bartolomé Estaban Murillo, the second of the two great Spanish masters, was to Velasquez, both in friendly intercourse and in style of art, what Raphael was to M. Angelo. Born at Seville, A. D. 1616, showing an early aptitude for art, he was placed in the studio of a relative named Castillo; where he learned to execute coarse sketches which sold so well to the country people at the fairs of his native town, as to give him, from early youth, an ample livelihood. A report as to Vandyke, brought by a fellow-pupil who had studied under him at Madrid, opened a new world in art to Murillo, then only twenty-three years of age. To gain requisite means for study at Madrid he painted a large number of cheap pictures, which he sold to traders to the American colonies at such an advantage as to soon realize the sum needed for his tour. These pictures, treasured because they are Murillo's, are now the pride of many an old Church in Spanish South America. Proceeding, A. D. 1643, to Madrid, Murillo was received with great kindness by Velasquez, now at the zenith of his fame; and through him Murillo was permitted to study and copy the best paintings of Titian, Rubens, Vandyke, Ribera, and Velasquez. Returning then to Seville, though Velasquez urged him to visit Rome, he spent the remainder of his life industrious and honored in practicing his art.

Like Raphael, Murillo had, after commencing his profession, three different styles, the first entitled "frio," or cold; the second "calido," or warm; the third "vaporoso," or misty. The first, practiced for about three years after his return from Madrid, was vigorous in design but coarse in coloring and finishing. In 1648, when thirty-two years of age, Murillo married an Andalusian lady of rank and fortune; a marriage which gave a new character to his

mode of life and equally to his style. His before bold and vigorous drawing was softened down and hidden by a subdued and polished style of finish which manifestly tended to an extreme; a style which he seems to have continued for about ten or twelve years. In 1658 he planned an Art Academy, in which several able artists were united and which went into operation A. D. 1660. Association with artists in such a connection, and with the atmosphere of Academic teaching, brought back the vigor of his youth and unfettered him from the trammels of artificial society and aspiration in art to which his marriage seems to have subjected him. The bold design and vigorous drawing of his first style was united to the finished coloring and sweet grace of his second style; while over both was thrown, by his genius, a dreamy mist of fascinating attractiveness.

Murillo's works were almost numberless; like Raphael's his paintings were preferred to those of his more scientific and sublime rivals; for, while Velasquez was beyond rivalry in all the higher walks of art, Murillo in scenes of social life and themes of sentiment, which always win, was inimitable. The fortunes of war in Spain, joined to their own superior attractiveness for ordinary beholders, have caused a wider dispersion of the works of Murillo than of almost any modern artist. They are found in the galleries of France, of England, of Germany, and even of Russia; and though a critic like Ruskin may protest against this comparatively high rank assigned to Murillo, and call him a "base" artist, his style will always be a favorite with popular observers.

After Velasquez and Murillo, who had brought art to perfection in Spain, when it had declined in Italy, painting rapidly degenerated in Spain, as it had in Italy after M. Angelo and Raphael; perhaps because the spirit of imitation of great men is the most deadly foe to naturalness in art and literature. The greatest minds had struggled in vain to break down the national spirit, which united with ecclesiastical caution in Spain, opposed simple naturalness in design and coloring; and even Velasquez and Murillo left what they had found, the favorite popular sombre hues in coloring as the ecclesiastical standard of drawing in sacred scenes and personages.

Sect. 10. The Eclectic School of Bologna, Imitative though Select; Established by the Carracci, Adorned by Domenichino and Guido, closing with Carlo Dolce.

In seeking entireness of view, while considering the Spanish Schools, the later period of the history of the Italian Schools has

been anticipated. Kugler argues that when the culminating and climactic period of art has been reached in any country nothing else than a decline can be expected. The development of Spanish genius was late in point of time; struggling, as it did, beneath greater causes of depression than Italian art; being long unconcentrated in idea by the want of a Spanish nationality; restricted in its field by the Moorish occupation of the rich Southern provinces, even up to the time when Italian art had reached its climax of perfection; and, even after that era, repressed by an ecclesiastical surveillance that put its ban on the independent conceptions of an originating mind, and almost suppressed by a national taste wedded to the artificial past which made true genius, except in the very last age of imperial patronage, seek employment anywhere else than in its own home. In Spain the reaction into decline, after the two great masters who could not be rivalled, was immediate and almost complete. In Italy the decline took another turn.

When philosophy as in Plato and Aristotle, Kant and Reid, has reached the acme of a nation's developement when science as in Archimedes and Newton has exhausted the field of an age's advance and no new path for generations seems to open, men of genius, unable to be original, and compelled to be servile imitators or fruitless visionaries in the old pursuit turn their thoughts to some unworked mine; and the mart of the worn out vein must decline and decay. This seems to have been the history of the decline of epic and dramatic poetry, of philosophy and oratory in Greece; and also of Grecian sculpture after Phidias and Praxiteles, and of painting after the great masters of ancient Greece and of modern Italy. When this decline began in Italy two noble classes of minds struggled against the downward tendency; the Eclectic School of the Carracci, and the Naturalistic School of Caravaggio. The history of these schools deserves for their own merits, and demands because of their instructiveness a prominent place in the history of Italian painting; not as a model period for the artist to copy after, but as filling up the circle of complete study.

While in every school of Italy, save Venice, the followers of Lionardo, of Angelo, and of Raphael were becoming mere copyists, at Bologna an artist of grave and independent bearing appeared who set himself earnestly to oppose the spirit of imitation. It was Lodovico Carracci, born A. D. 1555, educated in part under Tintoretto at Venice, like Lionardo a close student and an original thinker, possessed with the controlling idea, that, since the great

masters had perfected painting each in the line of his own excellence, the only way left for an aspiring artist, was to select and combine their several excellencies. Two nephews of his, Agostino, born A. D. 1558, and Annibale, born 1560, the former self-taught and theoretical, the latter a student of the style first of Correggio and Paul Veronese in Northern Italy, and then of M. Angelo and of Raphael at Rome, united with him in opening a studio and establishing a school at Bologna; which received the derisive soubriquet of *Incamminati*, or, Walkers in leading strings. The three Carracci had severally those individual peculiarities, which, when brought together, furnished all the requisites of efficiency. Lodovico, popular and impressive in manners was the presiding head; Agostino learned and analytic was the chief teacher of principles; and Annibale ready and skilful with the pencil and brush was the practical illustrator of the system. The models of the school were set forth by Agostino in fourteen lines of Italian verse, still preserved; among which were "the drawing of Rome, the action and shading of Venice, the dignity in coloring of Lombardy, the terrible energy of M. Angelo, the true natural of Titian, the sovereign purity of Correggio, the exact symmetry of Raphael, the decorum and foundation color of Tibaldi, the invention of the learned Primaticcio, the grace of Parmigiano." As the last of this list, Nicolo, an imitator of Raphael at Bologna is mentioned as the model of all excellencies; and the large place thus given by the Carracci to this and other mere copyists indicates a critical judgment warped by prejudice; an attribute most directly at war with practical adherence to the principle of the school.

The finished works of Lodovico were few; and these are regarded by Kugler, though excelling in certain particulars as without harmony as a whole. The two principal works of Agostino are the "Last Sacrament of St. Jerome" at Bologna, and "Hercules crushing the Serpents" at Paris; both of which show the labored effort of a theoretic teacher to be true in every respect to his principle. Annibale was a voluminous and able artist; his numerous paintings displaying many of the excellencies of the great masters whose combined excellencies he sought to copy; while, however, there is an air of artificial imitation that like a theatrical style in a public speaker never wins as does a less polished natural enthusiasm. The great merit of Annibale Carracci was his origination of landscape painting proper in Italy; the back-ground in some of his historical pieces surpassing that of the figures and their action in the fore-ground.

The judgment of English critics as to the comparative merit of

the Carracci and of their School has been higher than that of the German critic. Of Lodovico Sir Joshua Reynolds wrote; "Style in painting is the same as in writing; a power over materials whether words or colors by which conceptions or sentiment is conveyed. And in this Lodovico Carracci, I mean in his best works, appears to me to approach the nearest to perfection. His unaffected breadth of light and shadow, the simplicity of coloring, which, holding its proper rank, does not draw aside the least part of the attention from the subject, and the solemn effect of that twilight which seems diffused over his pictures appear to me to correspond with grave and dignified subjects better than the more artificial brilliancy of sunshine which enlightens the pictures of Titian." Of Annibale's "Descent from the Cross" John Bell says, "The drawing of the figure of our Saviour is at once the most learned in point of anatomy and the truest to nature of any that I have ever seen."

In the Eclectic School, as in others, pupils excelled their masters. The ablest first developed was Zampieri, called Domenichino. Born A. D. 1581, placed when young in the study of the German master Calvärt, he soon found his way into the School of the Carracci. Though at first slow and distrustful, and sometimes trammelled by the rules of his school, he was preëminently a natural artist. He soon developed a style of artless loveliness in drawing and coloring so akin to that of Raphael that some able artists, as Poussin, have ranked him next to that master. Some of his frescoes at Rome, especially his "Two Evangelists," Kugler thinks the finest in expression to be found in Rome; while the artist's best works are the "Scenes in the Life of the Virgin Mary" at Fano. Another pupil, eminent in quite a different line, was Albani, born A. D. 1578. A child of fortune, possessed of a beautiful wife and of every desire in the reach of wealth, his style of painting was preëminently the elegant. His studies and themes were chiefly classic mythology and legend; and Venus and the Graces he adorned with all conceivable personal charms and surrounding delights. His style was easier of imitation than that of Domenichino, and he gained more personal admirers and pupils. In his old age a deeper sentiment seemed to possess him, and his themes became Christian. The star of this school was Guido Reni, born A. D. 1575. Gifted with the instinct of a refined order of beauty, he studied at first under Calvärt, but soon entered the school of the Carracci. With an early style strikingly natural and vigorous, he adopted that sweetness and joyousness of conception which characterizes his later works. His themes were

general and abstract. His "Aurora" at Rome, where he was long employed by the Pope, is an admirable specimen of his style; the impression of swift sailing motion in every part, in the galloping steeds, the rolling wheels, the torch of Lucifer blown back, and the forward strain of Aurora in her chariot, fascinating the beholder as if the scene were real. In his last days Guido fell into the vice of gaming, and to repair his losses painted rapidly for money. He thus took on a third style, his designs being often almost devoid of sentiment and his execution unfinished, while, however, his instinctive love of beautiful forms gave a charm to his works which brought him abundant purchasers.

Next after Guido, Barbieri, called Guercino or Squinter, from the fact that in early childhood his right eye was injured, held the palm of excellence at Bologna. Born A. D. 1590, despite his defective sight he showed remarkable early skill and industry in drawing and painting. Like Raphael and Guido he developed three different styles at different periods of life; a fact which, since it occurred in three men of similar genius and virtually in the same school, must have had a natural cause. Youths of genius both as writers, speakers and artists, develope an unstudied power, attractive for its naturalness and impressive from its energy; but which does not bear too frequent repetition. Such minds, finding themselves soon outstripped by mere plodders whose every effort is an advance, either sink into listless inaction, or nerve themselves to the humbling acknowledgment that personal improvement is needed and to the self-denial of thorough study and practice. Thus a second, manly and manhood style is attained. Returning success and consciousness of increasing power invites to a style of life requiring princely expenditure; a style in which finish must be sacrificed for rapidity of execution; and genius stooping from its empyrean height, poises itself for flight in a lower, denser atmosphere, where its weakened pinions find a stronger support, and can thus sustain by a more languid effort, the weight they must still bear. Guercino, like Raphael and Guido, began with a style of young unchastened vigor under teachers of kindred spirit; as he advanced he sought the finished culture of established schools; and, when overburdened with pecuniary demands, he became hurried and careless in execution. Guercino's first style was an exaggerated natural, almost violent in action and crude in execution; a testimonial that in art as in literature early ambition for notoriety may cause future mortification. His second style displays vigor in drawing with a sweet harmony in coloring, and above all a masterly power of light and shade, giving such a reality

of relief to his figures, that they seem separated from all behind and suspended in the air; a power which gained him the title of the "Magician." His third style, developed in the waning of Guido and seeming to imitate his method as a means of succeeding to his immense patronage, lacks distinctness in aim and has a soulless beauty which speaks only to the eye of sense. His industry is indicated by the fact that he executed no less than one hundred and six altar pieces, and one hundred and forty-four large cabinet pictures, besides frescoes and small pieces. His master-piece in magical relief is his fresco in the dome of the Cathedral of Piacenza.

While eclecticism had its chief seat at Bologna, it was, from the causes already mentioned, the pervading spirit of other Italian schools. The School of the Carracci was in fact anticipated by fifty years in the person of Giulio Campi, born A. D. 1500, at Cremona in Southern Lombardy. Trained under Giulio Romano, he aimed to combine the excellencies most diverse of Raphael and Correggio. His family relatives were his chief pupils; and little éclat gathered about his school. At Milan a more noted and extended Eclectic School originated in Procaccini, born A. D. 1520, educated at Bologna, who settled at Milan, founded a school and executed valuable works for that city in a style mingling the grace of Parmigiano and the breadth of Correggio. Among his numerous pupils and successors Crespi was the ornament of the school. At Rome a kindred school was inaugurated by Baroccio, born A. D. 1528, who studied superficially the great masters, aimed at a combination of excellencies, and really excelled in giving animated emotion to his figures, and an admirable effect in chiaroscuro to his back-grounds. His effort died with himself from the violent opposition of his associate artists. The influence he exerted however reached Florence, and there led to more permanent results.

Even during the life of M. Angelo, Florentine artists by making him their model planted seeds of degeneracy in that most illustrious of Italian schools. Vasari then flourished; who, while embalming for all time the memory of the great artists that preceded him, discloses by his empty boast how unconscious inferiority is of its own shameful decline. "We," says he, "paint six pictures in a year, while the earlier masters took six years to one picture;" and he adds, "and yet these pictures are much more perfectly executed than those of the early school by the most distinguished masters." Certainly a reform was needed when this statement could come from one of the old Florentine School. The Eclectic School began with

Cigoli, born A. D. 1559, admired for his attractive warmth in coloring, though sentimental in expression. Among its eminent masters were Allori, noted for his heroic figure of Judith holding the head of Holofernes; Empoli, who reproduced the majestic old Venetian princes, set off, however, with radiant Florentine lights; and Rosselli, who with his pupils gave to portraits a life-like freshness. The favorite master, with whom the eclectic spirit expired in Italy, was Carlo, called Dolce from the sweet style of beauty he conceived. Born at Florence, A. D. 1616, of ancestors who for two generations had been artists, such was his promise, at the age of nine years, that he was placed by his mother, then a widow, in the studio of an artist named Vignali. In a few years he produced a St. John, and shortly afterwards a portrait of his mother, which brought the fascination of his developing style to public notice. Adopted by the Medici family, now represented by Pietro, he devoted himself to single figures, often heads only, chiefly Magdalenes and Madonnas, whose winning sweetness of expression gave him his name. Dolce had but one style, as he had but one ideal; always failing, as in his Diogenes and his Lantern, when he stepped out of the path which Nature had made him to walk in. Hence his numerous works, each admired where it is a separate treasure, are all reproductions of the same type, easily copied by an artist of imitative skill. They are also of that order of excellence in which female artists have proved themselves eminent; and Dolce's daughter Agnese trained by himself, became his most efficient aid in working up his designs, and his most successful copier after his death. It was natural that the Eclectic age, which had kept alive a spirit of art nearly two centuries, whose principle however was successful imitation, should close with such an artist as Dolce; whose one ideal, and that a feminine type, could so readily be copied, thus putting the artist of greatest ability on a level with one of the least skill and merit.

Sect. 11. The Reactionary Natural School preceding the decline of Italian Art; originating with Caravaggio, and adorned by Salvator Rosa.

As already intimated the first spring of aspiring genius is after a style original and truly natural; as is seen in the early bent of Raphael, Guido and Guercino. This is the history of art in a nation as in the individual. The first great poets of Greece and of England, the first true artists of Italy and of Germany were pre-eminently of the Natural School. Forgetful that culture which even genius needs for

a sustained flight must never cease to be progressive, artists and schools of art have soon become stereotyped; the master only repeating himself, both in his own productions and in his pupils. Unmindful, again, that this progress can only come from an ever stimulating aspiration for originality united with the comprehensiveness given by liberal culture, schools eclectic in principle have bound too tight the fetters of authority, needed indeed by genius, till bursting from the galling bonds, aspiring minds have rushed to the opposite extreme of lawlessness as to style in letters and art. It is in this law of the impulse of genius, so illustrated in the history of both art and letters, that the rise of the Reactionary Natural School preceding the decline of art in Italy is probably to be found.

The same unartistic spirit of imitation, degenerating into mannerism, which aroused Carracci only fifteen years earlier to seek relief in eclecticism, inspired Caravaggio to force a reform by a return to naturalism. M. Angeli Amerighi, called Caravaggio from the town where he was born A. D. 1569, was in youth a paint-grinder for an artist at Milan, who aroused his ambition to become himself an artist. Going to Venice he studied the works of Giorgione, and became at first an imitator. Being of a passionate temper and dissolute in habits, he commenced a wandering life, and adopted a style of painting in keeping. At Rome he killed a companion of his revels; and fled to Sicily, but was pursued, attacked and severely wounded by assassins. Pardoned by the Pope he left Sicily for Rome again; but being roughly assailed on landing at Civita Vecchia, and stripped of everything, he undertook to walk to the city a distance of forty miles, his wounds became inflamed, and ere he reached the gate he sank down and died of exhaustion at the age of forty years. He painted indeed from nature; but from unnatural scenes of passion and lust met in the dens of infamy, seldom seen and scarcely dreamed of by the mass of virtuous society. There is a power and a pathos about his best works at Rome; arising from the passion which was real in the artist and truly transferred to his canvas, and from the dark shadows, so in contrast with the sweet clear light of ordinary life, ever settling on the pathway of men that "love darkness rather than light because their deeds are evil." Caravaggio's style in themes appropriate was masterly; a large part of his subjects were after Schiller's early literary fancies in his Robbers, scenes of murder, sorcery and robbery; his "Gamester" being a type. In themes of a religious cast, however, nothing could be more inappropriate; Kugler saying of the very best of them, his

"Entombment of Christ in the Vatican," that it is "too like the funeral ceremony of a gipsy chief."

Caravaggio had numerous imitators among young artists of genius, many of whom, however, when their judgment matured, changed their style to one less passionate and more gentle, both in design and shading; which perhaps Caravaggio would have done had his life been spared. While many for a time were in love with his style who afterwards abandoned it, many others with more or less of modification adopted it as a permanent method; among whom were several foreign artists as Vouet and Valentin of France, Corenzio, a Greek, and Ribera the eminent Spanish painter, settled at Naples.

Shortly after Raphael's death a rival style to his had been introduced at Naples by one of his pupils, Polidora Caldara. At first an imitator at Rome of his master, going to Naples he broke suddenly into a style quite opposite: his designs being pictures of passion in excess and his coloring in deep brown hues grand but gloomy. At a later day Ribera called "Lo Spagnoletto," the little Spaniard, born A. D. 1593, who was at first a pupil of his relative Ribalto in Spain, then of Caravaggio, became the leading spirit in a Naturalist School of Art at Naples; where he spent forty years of his life. Many of his works show the influence of his early instruction in the liveliness of their coloring; some of his sacred themes are chaste in design and admirable in execution; but most of his works, treasured at Naples and Madrid, are scenes of horror, such as martyrdoms and executions.

The last among the truly able painters of this school was Salvator Rosa. The school closed as it began, with a wild adventurer as its great representative. Born near Naples, A. D. 1615, Salvator having acquired the art of sketching at the age of eighteen years, made an art tour to the mountain dens of banditti, among whom he took sketches for future use. Returning he executed cheap pictures on paper to gain means to support his family, left dependent by his father's death. One of these falling into the hands of an artist, his merit was discovered; and he was drawn to the School of Ribera. Visiting Rome at about twenty years of age he became eminent in the threefold capacity of actor, musician, and painter. During the political revolution that arose shortly after at Naples, he returned and joined the insurgents; after whose defeat he escaped to Florence, painted awhile, and then went to Rome where he remained till his death. His conspiracy of Catiline is a specimen of his design in historical subjects; the figures being Neapolitan revolutionary

leaders in ancient Roman costume; while his head of a warrior, fearfully gloomy, is a specimen of his power in dark portraiture. Salvator's landscapes, however, are the true works of his originality and power. Most of them are dark, dismal mountain ravines and forests, with a lonely hermit or a robber band in the gloom, appearing as the sole tenants.

The progress of Art is much the same in all lands and ages. Beginning with the childhood effort at imitation, its teacher, instead of nature, soon becomes its model. Breaking in youth from the bonds of authority it discards too far the need of laws and of studious conformity to them. Brought back in manhood to system again, it works too much like the man of settled and driving business, ever in the same rut; until a son attempts to follow his father's method in a pathway not his own, and decline and failure is the result. So is it in the progress of art in the nation and the individual. The natural style is the offspring of genius in its early vigorous but rude aspirings; but it is only the first stage in the true artist's progress. Appearing as in Giotto, in the commencement of Italian progress in art, it was legitimate as a model for study and imitation. Revived, however, at the close of a long line of comprehensive and cultured artists it was illegitimate. The School of the Naturalists, though in some respects noble in its aspiring, was composed of men like Byron and Shelley in poetry; whose fiery spirits burnt rapidly to the socket the candle of their existence; and then left the world, upon which they had gleamed an hour with a dazzling but unsteady and temporary light, all the darker for their having shone in it.

CHAPTER VIII.

THE ADVANCE OF MODERN PAINTING IN CENTRAL EUROPE; INCLUDING GERMANY, THE NETHERLANDS, HOLLAND, AND FRANCE; EMINENTLY SECULAR IN SUBJECTS, NATURAL IN STYLE AND CHARACTERIZED BY PERFECTION OF SHADES IN COLORING.

We have already observed that commerce, awakening the zest for foreign improvements, and affording the means for gratifying that aspiration, seemed in Italy to give the first impulse in the revival of true

art, alike in sculpture, architecture, and painting. The same causes operated in the rise of art in Germany. A century before the time of Giotto mercantile associations existed between German and Venetian merchants; as early as the days of Cimabue the Hanse towns of the lowlands were leagued for mutual protection of the trade that came from the Mediterranean to the Baltic, having Venice in the South and Oleron in the North as its chief entrepots; and when Albrecht Dürer the founder of the true German School was on his visit to Venice it was for an association of German merchants that he painted his St. Bartholomew.

As the old German Empire virtually embraced the entire region now included in the German States, together with the Netherlands, or Holland and Belgium, and also a part of France, they were closely associated in the history of art. It was at Cologne on the borders of France that the first school really known to history arose; while at the same time there existed schools not less advanced though less noted at Nuremburg in the heart of modern Germany and also in Westphalia in the lowlands. The order of location mainly, but in part also the order of time, leads to the notice, first, of the Schools of Germany; then of the Netherlands or of the Flemish race; next of the Dutch in modern Holland; and finally of the Schools of France.

The rise of art in Italy was the revival of an ancient spirit, awakened and guided by ancient models; so that nature in the ideals of former masters controlled its development. The Germans had no ancient glory in art to revive, and no model but unanalyzed nature; and the style developed among them was the natural, as opposed to instead of associated with the classic. The Italians again lived under the very overshadowing of the wings of ecclesiastical jurisdiction; and the reformation which struck at the formal past and sought primitive simplicity in religious symbols, historic scenes and personages, had only a temporary effect to modify art in Italy; and hence Italian painting remained from first to last eminently religious in its subjects. The Germans, however, descendants of a stock noted in all time for their spirit of direct antagonism to foreign domination, remote from the central bond of ecclesiastical attachment, receiving the doctrines of the Reformation from a secular spirit of independence as truly as from a yearning for a more spiritual faith, became at once eminently natural in their treatment even of religious themes and specially devoted to the delineating of scenes of secular life. Yet again the Germans, even in the heart of their country at Nurem-

burg, much more amid the fogs of their seaboard, had a sky that never was free from the dark shadows cast by watery clouds; and it was impossible that they should conceive such a sky as that of Italy, till their own great master Albrecht Dürer roved in rapture through what seemed to the northern artist enchanted ground. In addition therefore to the eminently secular instead of religious themes, of the German as compared with the Italian artists, and their independent and natural style of design as contrasted with the artificial and formal classic, the German artist in place of the clear, open transparence of an Italian day-light and the gorgeous glare and curtained purple of Venetian night-shades, exhibit almost uniformly a darkness of gray shade which belongs even to the summer day of a Northern sea-girt land.

Sect. 1. The Rudimentary history of Painting in Germany to the Sixteenth Century.

There is evidence that in the middle ages, by means of commerce through Venice with the East, Byzantine painters penetrated to Germany. The earliest native paintings partake the traits both of the Byzantine and of the old Romanesque or Gothic styles, having the stiff angular drawing of the Romanesque rather than the rounded contour of the Byzantine, and the cold gray tints of the West instead of the warm hues and glittering gold pigment of the East. Prior however to the opening of the fifteenth century only one name of any note has come down to us to indicate the condition of German art in those early periods.

More than half a century after Giotto, an artist appeared on the Lower Rhine of whom this mention is made in the "Annals of the Dominican Monks at Frankfort." "In that time, Anno Domini 1380, there was at Cologne a most excellent painter; to whom there was not the like in his art. His name was Wilhelm; and he made pictures of men that seemed almost to be alive." William of Cologne, or de Herre as he is called by old German authorities probably from a small town of that name where he originated, executed pictures which are still treasured for their merit as well as their antiquity. Four of these are at Cologne; two altar pieces, one in the Cathedral and one in a Church; and two others, a Madonna and a Crucifixion in the Museum of the town. At Munich four paintings are known to be his; each consisting of a group of four saints and apostles painted in Gothic niches; three of which are executed upon a golden ground after the Byzantine style, and the fourth on a dark back-

ground, indicating the knowledge of varied styles in the artist's day and clime. Wilhelm established a school of art in which some pupils of merit were developed. The name of only Stephan, however, has been preserved; called Meister Stephan probably as a teacher in the school succeeding Wilhelm; while the works attributed to him show true merit. These are fine altar-pieces executed A. D. 1410 in the Dombild or Cathedral of Cologne; and a picture of St. Veronica receiving the imprint of Jesus' face on her handkerchief, which is preserved in the Pinacothek, or Picture Gallery of Munich; and is regarded one of the finest relics of ancient art. The head of Jesus is seen in black outline on the white handkerchief; and the composition, as well as the drawing and coloring, shows a knowledge of some of the higher principles of art. The place which the German people themselves assign to Wilhelm of Cologne and his school in the history of their native artists is indicated in the series of historic frescoes with which the walls of the Munich Gallery were adorned during the years 1830 to 1835. The first three compartments represent, *first*, the connection of Art with Religion; *second*, the civil establishment and the religious conversion of the German nations; *third*, the triumph of German architecture in the erection of the Cathedral of Cologne; while the *fourth*, embodying the history of German painting, pictures Wilhelm of Cologne painting a Madonna and child on his knees, and then dying in poverty; while after him follow A. Dürer and other great German painters. Wilhelm's school was celebrated for a century.

As early as the opening of the fifteenth century schools of art existed, one in Westphalia and another in Nuremburg. Of that in Westphalia few historic memorials are preserved; and it is chiefly interesting as the precursor of the Flemish Schools, which soon after arose in the Netherlands. That of Nuremburg has a history more cherished; since out of it came Albrecht Dürer, while even at this day it has a new youth in the school just south of it, at Munich in Bavaria. One of the eminent names in the line of Nuremburg painters, who must have lived more than half a century before Dürer, was Martin, called Schongauer from the beauty of his style. The names and works of two or three others are preserved; their style showing the German element of patient and persevering labor. The family of Schongauer must have been a numerous one and long given to art; for in 1492 Dürer went to put himself as his last teacher under three of this name at the town of Colmac. Perhaps the most eminent before Dürer was Michael Wohlgemuth. The

high estimation in which Dürer held him, as his early and most efficient teacher, as well as his preserved works, indicate that he was an artist of ability. A series of four of his pictures are in the Munich Gallery; a Nativity, a Crucifixion, a Deposition from the Cross, and a Resurrection. Of these Lord Lindsay remarks, that though uncouth in general design, attitude and drapery, there is a heavenly expression about the countenance of Jesus that betrays great power in the artist. Wohlgemuth was born A. D. 1434, and died A. D. 1519; and the sixteenth century opens with the full establishment of a German character in the Art under Dürer.

Sect. 2. The establishment of the Native German School under Albrecht Dürer and Hans Holbein.

As we have seen in the history of the rise and progress of art both in ancient Greece and in modern Italy, the greatest genius is dependent on instructors, and on the accumulating collections of skill that men and their works preceding him have furnished to guide his course. The independent beginner, though he be a prince in natural gifts, cannot originate everything and at once; just principles in design, in drawing and coloring, the best materials for his work, and the most skilful methods of employing them. In the early history of art in Germany, as in Greece and Italy, it was again illustrated that from the necessity of man's nature progress must be gradual, even among a people eminent for those qualities which secure ultimate perfection. It was a full century from the time that William of Cologne had reached the zenith of his original and native excellence, before even the dawn of the day when the old Gothic drawing and Byzantine coloring was triumphed over, and a style deserving to be called the native German was heralded by the birth of its acknowledged head.

Albrecht Dürer, commonly known in English etymology as Albert Durer, was born at Nuremburg A. D. 1471. His father, a goldsmith, reluctantly yielded to his son's bent; allowing him at the age of fifteen years to enter the studio first of Hugo Martin, then of Michael Wohlgemuth. After four years under this able master, at the age of twenty-one he spent three years in visiting different parts of Germany and the Netherlands, making the acquaintance of artists, and studying for a time under the Schongauers. Returning home at the age of twenty-four years to Nuremburg, he married and commenced practice as an artist. Almost immediately he came into public notoriety, first as an engraver, then as a painter. His new

and greatly improved method of engraving brought him to the notice of the Emperor Maximilian I.; and soon after, his bold invention, and the energy thrown into his drawing, won the special applause of the Court. One day as Dürer mounted on a ladder leaning against the wall of a saloon in the imperial palace, was tracing the outline of one of his fine designs, the Emperor and some of his courtiers entered. As the artist was reaching to one side at his work the ladder seemed likely to slide; when the Emperor beckoned one of his suite to hold it. He hesitating, and calling for a servant, the Emperor stepped himself to the ladder and held it till the drawing was completed. When the artist descended, the Emperor, in presence of his courtiers, conferred on Dürer the rank and immunities of a nobleman, that he might never again be deemed an inferior; saying as he proclaimed the artist's new title; "Know that this painter is already more than a noble by his talent. I can easily make a peasant a nobleman; but with all my power I should never be able to make a nobleman such an artist as Albrecht Dürer."

In 1506, when thirty-five years of age, Dürer went by the aid of his warm friend, Pirkheimer, a Senator of Nuremburg, to visit Italy. Received with high honor at Venice, he painted for his countrymen, who were merchants there, a St. Bartholomew; thence he went to Bologna to study perspective; at Florence he made the acquaintance of Raphael, for whose early genius he conceived a high esteem; but though enraptured with the climate and the art spirit of Italy, he returned the next year, 1507, to Nuremburg with none of his characteristic features of style essentially modified. Indeed in no material respect was there a correction of his acknowledged faults, which were an excess of the dramatic in his composition, a stiffness in the bold outline of his drawing, a lack of breadth affecting his perspective, and an exuberance of fancy both in the execution and conception of his works. He was, however, a true master in art; as such he was courted by Charles V. and Maximilian; he was the favorite especially of men of letters; and his works were sought in almost every large German city. Always religious in his inclinations, making most of his studies Scripture themes, he became an adherent of the doctrines of the Reformation, and had as his special and congenial friends such men as Melancthon and Erasmus; he painted the portraits of the great leaders in religious reform; and in his Christian themes chose instead of the ideal and classic conceptions of Italian artists, original and sometimes perhaps too independent creations of his own imagination. In 1520 Dürer made a second

visit of four years to the Netherlands; spending some time in congenial professional interchange with Lucas of Leyden, and being fêted as a prince at Antwerp, Aix La Chapelle and Cologne. On his return a marked change appeared in his style from the dramatic to sober simplicity; Melancthon the great scholar of the Reformation, stating that Dürer confessed to him he had fallen short of his present conception of the simple spiritual majesty belonging to sacred themes; a confession common to men of true genius, who grow in spirituality as they mature in power. Though honored by men of the highest intellectual attainments, Dürer seems to have been specially unfortunate in his female associations. His marriage, urged by his father, was uncongenial; the daughter of Maximilian treated him with arrogance, rejecting his noble present of a portrait of her father and of others of his works; and the wife of the Senator of Nuremburg, who sought his advancement, openly opposed her husband in his generous patronage. These trying obstacles seem to have worn upon his sensitive spirit. He died at the age of fifty-seven years, A. D. 1528; universally acknowledged, both during and since his day, the establisher of the Native German School in Painting.

Contemporary with Dürer, born one year later, A. D. 1472, was Lucas Cranach, the great Saxon painter. He was court painter to three successive electors of Saxony; accompanying the first of the three on a visit to Palestine. He was more devoted to the reformed doctrines than even Dürer; being the intimate friend of Luther, Melancthon and others. His style had less of the bold grandeur of Dürer, and more of grace and simplicity. He had the fault of excess in fancy; and delighted in the anachronism of introducing Luther and his associates in scenes such as the Crucifixion and the Last Supper; a fault less excusable than the earlier custom of bringing monks into kindred scenes, since it was directly opposed to the professed spirit of the Reformation, and was designed to exalt Luther in a merely controversial aspect. Cranach was an able artist, and the virtual founder of a Saxon School.

After these two artists Altdorfer, a pupil of Dürer, deserves mention; who perverted his master's style by giving too loose a rein to his fancy. He is noted for the romantic scenery, and other associations, made to cluster about both his secular and his sacred themes; as is seen in his "Victory of Darius over Alexander," and in his "Birth of Christ. The next great master of Germany prior to the modern period was Hans Holbein, born 1495, whose history belongs

to English as well as German art. The son of a painter, he early showed the ability of his later years in portrait and historical painting. When about thirty years of age he made the acquaintance of Erasmus; and as an artist fostered by this reformer went at his suggestion to England; from which country Italian artists were then virtually excluded by the position of Henry VIII. towards the Pope. Holbein's excellence was the fine relief he gave to heads in portraits, together with an air of ease and animation in expression.

The Native German School was a witness to the fact that while art is ever the courted handmaid of religion, spiritual Christianity has proved its higher inspirer, giving shape to its conceptions and making its productions subservient to its high ends. The lives of Dürer and of Holbein showed that while a national prejudice, especially when it has a foundation in religious differences, may alienate monarchs and people, it cannot break up the brotherhood of lovers of art, nor make artists to be everywhere, as citizens of the world, courted guests in every form of civil government.

Sect. 3. The Revival, at the close of the Eighteenth Century, of the formal and mystic style by Overbeck; of the ideal historic by Cornelius; and the restoration of the natural style by the Dusseldorf School.

In all progress there is a tendency to extremes which leads to reaction; a reaction, however, only temporary, from which there is a speedy recovery, and the gathering of a new impulse for a yet more decided onward move. All natural growth is by stages; the rapid development of the days of showers being succeeded by the check of drought; and the increase of summer being followed by the complete arrest and even loss which ice-bound winter entails. Even religious reforms, in the spread of genuine Christianity, are not exempt from this law. The reformation of the fifteenth century, in Germany as in other lands, had men of extreme views as its leaders; it was continued by men of more sober and less revolutionary ideas; while many, opposed to its end and spirit were led to a reactionary religious course. The progress of art in Germany was subjected to the same irregularity of progress. That reaction showed, as ordinarily, three tendencies; first the latitudinarian, based on extreme independence of thought and rationalistic foundations of religious theories; second the conservative, leading to a return to old ecclesiastical statutes; third the medium, retaining all that was valuable in the past, and adapting it to the new spirit of progress pervading the ages.

Albert Dürer and Lewis Cranach had so rigidly adhered to the spirit of the reformers in the style of art established by them that Dürer's visit to Italy and even his intimate personal acquaintance with Raphael had wrought no softening change in the naturally vigorous, yet directly unclassic manner of drawing which was peculiarly his own and which became the German type; and yet age and Melancthon's mild criticisms chastened his method. Towards the close of the eighteenth century, German scholarship began to show that fondness for philological criticism which has culminated in the nineteenth century. The impulse in this direction given to general thought in Germany by Niebuhr, and especially by the two Schlegels, was naturally communicated to artists. This general return to ancient authority took two features in two different classes of minds; the one resting in the approximate ancient of ecclesiastical Roman art, and the other in the remoter ancient of the classic Grecian. An eminent leader of this reaction was the Sculptor Schadow; who, having studied and adopted the antique style at Rome, fixed his residence in 1788 at Vienna where he attracted the notice of aspiring young German artists and aided in giving development to the revived style in painting originating with his own son, and yet more with Cornelius and Overbeck; three artists born within two years of each other. In opposition to this tendency to both the Roman and the Grecian antique, at a later period Lessing and others established a school of the real in contrast with the ideal natural, and allied to the Reformed rather than the Roman Church.

The decided Roman tendency found its eminent representative in Friederich Overbeck. Born A. D. 1789 at Lübeck, at the age of seventeen he went to Vienna, then at twenty-one to Rome, as a student of art; imbibing the spirit of the revival of the ancient style. The next year after his arrival at Rome he showed himself a leader among his associates, Cornelius, Schadow and others, by a painting of a Madonna which at once gave him the rank of a master. Going beyond his teachers, however, led by his peculiarly devout nature and sustained by his ability as an artist, he became at twenty-five years a member of the Roman Church and devoted himself to religious themes. His style assumed the dreamy mystic cast peculiar to his own spirit; and for more than fifty years Rome has been the centre of his labors. For a time Overbeck had many pupils and imitators; but these were mostly attracted to the school with which Overbeck at first had been associated.

The leader who steadily pursued the path marked out for the new

development, was Cornelius. Born in 1787 at Dusseldorf, his boy hood spent in the Dusseldorf Gallery of which his father was in spector, he early caught the spirit of the great Flemish maste Rubens. Trained in the Dusseldorf Academy, at the age of nineteen years he received a public commission which revealed his fondnes for the style of fresco perfected by Raphael; and, throwing off the tram mels which the restrictions of easel painting imposed, he assumed the bold, free, open method of drawing which fresco painting encourages Going to Rome in 1810, the same year with Overbeck and others of kindred taste, an artistic German brotherhood was gathered at an old Convent which became a wonder to the artists at Rome. After Over beck's virtual withdrawal Cornelius was the acknowledged leader in the newly adopted style. He remained at Rome nine years; during which he established a European reputation as the restorer of fresco painting. Invited in 1819 to take charge of the Dusseldorf Gallery in Lower Prussia, Cornelius infused the spirit of the new developemen into that old and illustrious institution. After ten years at Dussel dorf Cornelius was invited to attempt at Munich what he had accom plished at Dusseldorf so fully that the prosecution of his work could be entrusted to his pupil. At Munich he remained four years and en tirely reorganized its efficient Academy. Returning again to Rome he remained eight years; when he was drawn to Berlin by the king of Prussia. A Catholic in his Church relations Cornelius has a religious spirit everywhere acceptable. Thoroughly imbued with the love of the classic, his illustrations of the Nibelungen Lied, the Iliad of Ger many, are so thoroughly national that they are the delight of the common people. His largest, and in some respects most noble work is the "Judgment" at Munich, occupying a space sixty-four by thirty feet. As the restorer of the ideal historic in fresco Cornelius is the great master of Modern Germany; about whom a galaxy of names of almost equal lustre gather.

Here the most appropriate mention is perhaps made of Raphael Mengs; cosmopolitan in nationality, encyclopedic in learning, and eclectic in art methods; a critical writer of worth, and a genuine in spirer of young artists. Born A. D. 1728 in Bohemia, early promoted to be royal professor in his native country, he was appointed painter to the king of Spain in 1761 and head of the Academy of Florence in 1769. As the special friend of Winckelmann, as well as by his own prominence as a royal protegé, he acquired extended reputation His written treatises, more than his works, give him rank as a leader in German painting.

Within the last half century quite a different tendency has appeared in the yet developing spirit of German art; the revived independent German style of Albert Dürer, with its decided Protestant characteristic in themes and its bold naturalness and nationality in drawing and accessories; as a leader in which style Lessing has been prominent. Born in 1808, his father, a Prussian officer, allowed Karl at the age of sixteen to enter the architectural school at Berlin His taste, however, was for painting; and after studying under two masters at Berlin, he entered the Dusseldorf Academy, then under Schadow, who had succeeded Cornelius. Lessing caught the ideal style, and painted several pieces after it upon classic and historic themes. At the age, however, of twenty-four years he developed a spirit and a style entirely unlike that of his master; selecting themes of the intensest modern interest, throwing into them an energy of passion and a rich, bold imaginative design which separated him from his associates at the Dusseldorf school; of which he became the controlling spirit. His themes "Huss before the Council of Constance" and the "Martyrdom of Huss" indicate his religious bias. The methods of Lessing are characterized by the faults and excellences, by the lack of grace in outline and the mellowness in hues belonging to the Dusseldorf School in historic themes; but in landscape he is a perfect master of local hues and shadows. The truthful reality which Bendemann, of Jewish descent, has given to such themes as the "Captives of Judah on the Euphrates," shows another fruit of the new direction in art given to German genius at the modern Dusseldorf Academy.

Sect. 4. The Establishment of the Flemish School by H. and J. Van Eyck; Characterized by Lifelike Naturalness and Labored Coloring.

We have observed both in Italy and in Germany the influence of commerce in opening a pathway for the progress of art; at once giving acquaintance with the treasures in art of the older nations and thus awakening a taste for art, and also at the same time furnishing the means for the gratification of that taste. In the low country, on the inland sea which was in the Middle Ages the centre of the trade of Northern with Southern Europe, in the towns where the Flemish language prevailed, made illustrious once by the Counts of Flanders and now absorbed into the kingdom of Belgium, the spirit of art early manifested itself and hastened to an independent development. At Bruges, the central depot among the Hanse towns of

that former day and now an important seaport of Belgium, the Flemish School was virtually established by the Van Eycks, during the same period, shortly after Giotto's age, when the leading Schools of Northern Italy were taking their characteristic form.

Hubert Van Eyck was born A. D. 1366; and John, or Jan, his abler brother, about A. D. 1370. They had breathed from childhood the atmosphere of a painter's studio; their father being a worthy representative of the reign of Byzantine art. Leaving their obscure native town when young, with their sister Margaret also an artist, the brothers went to practice their art in the city of Bruges as a centre promising a field both for independent study and for patronage. Called to Ghent to paint a large altar piece, they united in a design of extent then unattempted; during whose execution both Hubert and Margaret fell a prey to fatal disease. The theme of the piece was the "Adoration of the Lamb," which embraced more than three hundred figures. John's fraternal devotion led him to introduce his brother Hubert among the redeemed, as a finely-formed man, clad in blue velvet trimmed with ermine and riding on a magnificent horse; while he placed his own plainer portrait in the back-ground clothed in a simple suit of black. This great work, painted in sections, is now divided between the Berlin Museum, the Gallery of the Louvre at Paris, and the Cathedral at Ghent. Two years after Hubert's death, which occurred in 1426, Philip, Duke of Burgundy, sent John as one whose genius in art made him a most fit representative on an embassy to Portugal. Returning in 1432 he removed again to Bruges where he died in 1445. The Van Eycks were originally masters in landscape painting; John especially excelling in aerial perspective. It was indeed to John's persevering efforts to find an improved method of giving transparency to atmospheric effects that the world became indebted for the method of employing oil as a vehicle in mixing pigments. The characteristic of the Flemish School, eminent in landscape, is a dark shading admirable in twilight scenes, the natural suggestion of the murky lowland sky. John, however, in the grand work alluded to above, has caught the tone of a southern clime; characterized by Humboldt in his "Cosmos" as "embellished with orange, date, and cypress trees, fanned by gentle breezes, which, from their extreme truth to nature, impart a solemn and imposing character to the other dark masses in the picture." The rank held by this artist in his own age, is indicated by the Latin epitaph on his tomb; whose translation imports, "He painted breathing forms, and covered the earth's surface with flowery

vegetation, perfecting every work to very life. In this Phidias and Apelles must give place to him; and Polycletus be considered his inferior in art."

The style of J. Van Eyck became the standard in the Flemish School for more than a century. Roger of Bruges, a pupil of Van Eyck, was noted as the teacher of other pupils who perpetuated the school. Among these Hans Hemling was eminent; born about A. D. 1430, deceased about A. D. 1500. A soldier as well as artist, his choice works, which he painted as thank-offerings for his recovery from dangerous wounds, are found in the Hospital of St. John at Bruges. Most of these are altar pieces; and they are gems of the Flemish School. A later eminent artist of this school was Jan Mabuse, born A. D. 1499, deceased A. D. 1562. Less pious than most of the school, leading a vagrant life, his themes were farther from the spirit of the religious, and marked with a fascinating naturalness. Contemporary with A. Durer, partaking the spirit of the Reformation, he found his way to England under Henry VIII. and painted portraits of Court personages.

The spirit of the native Flemish School, thus developed, was not confined to Bruges. At Antwerp appeared Quentin Matsys; a blacksmith in early life, whose genius in art, we learn, was roused by his admiration of a young lady whose condition in life was above his own, and whose hand he determined to deserve. In Leyden, also, the art of painting was cultured; and Lucas, called Van Leyden, became so eminent for sober naturalness of style as to have been made a model in this respect by A. Durer, even when personal acquaintance with Raphael at Florence had not modified his vigorous native method of drawing after nature.

At a somewhat later period Michael Coxies, a promising young Flemish artist, became a pupil of Raphael. As was true with his Italian pupils so with this Netherland disciple, Raphael had not the human power to teach scientifically what he had reached by the inspiration of genius, and still less the divine power to create his own gifts in his admirers. The Raphaelesque style was too much in contrast with the characteristics which had given an attractive charm to the early Flemish School; its glory declined; and another great artist of independent genius was demanded to call back its pristine life and to develope in it a greater perfection.

SECT. 5. THE CULMINATING ERA OF THE FLEMISH SCHOOL UNDER RUBENS; DISTINGUISHED BY BOLDNESS OF INVENTION AND RICHNESS OF COLORING.

The style of coloring introduced among the lowland painters from Italy could not be made to harmonize with the spirit of the people or the character of their climate, when united, as it was, to an affectation of classic correctness in drawing. The spirit of the people, fond of rustic and even rude fêtes, preferred the most indifferent scenic paintings that breathed the life they loved to the polished liveliness of imitators of Raphael. The climate of the lowlands made the brilliant clearness of an Italian sky seem unnatural; unless the peculiar aspect of their own sunny days were thrown over it. A master who could lead the popular taste so as to improve it, must unite a boldness of invention to liveliness thrown even into dark coloring. That master appeared in the person of Rubens.

Peter Paul Rubens was born in 1577, at Cologne on the Rhine, whither his parents had fled during the distractions of their native lowlands. At the age of ten years he was carried by them to Antwerp on their return home. His father designed him for the law; but at his mother's solicitation, when thirteen years of age, he was allowed to study painting. Till the age of twenty-three years he was in the studios of three successive Flemish teachers; when the latter, Otto Van Veen, seeing his promise advised that he visit Italy. Then commenced that succession of rambling sojourns which became a feature in his stirring and industrious life. He first visited Venice and studied the style of Paul Veronese and Tintoretto; and as Fuseli intimates "compounded the splendor of the former and the glow of the latter." Going thence to Mantua the duke made him court-painter. Soon after, sent to Spain as ambassador by the duke, he won at Madrid royal esteem for his gorgeous style and painted portraits of the king and of many of his courtiers. Returning to Italy he studied the works of Raphael and of M. Angelo. Visiting then Florence and Bologna he returned again to Rome. His Flemish cast, modified by his varied Italian study, became popular at Rome, and orders began to flow in upon him. Subsequently he visited Northern Italy, copying Lionardo's Last Supper at Milan, and executing at Genoa several portraits and historical pieces. The serious illness of his mother, after eight years absence, called him back to Antwerp; and the flattering proposal of the archduke to make him court-painter determined him to fix his residence at the centre of his early studies and young aspirations, and to make a national reputa-

tion. The following year, A. D. 1609, he married his first wife; to whom he was tenderly attached. He lived in an elegant mansion, his bearing was courtly, his reputation gathered numerous pupils to him from Northern Europe, orders flowed in upon him, and for ten years of uninterrupted toil his best productions came rapidly from his industrious brush. He could not altogether conquer his love of travel; in 1620 he went to Paris to decorate the palace of the Luxemburg, in 1628 he was sent as ambassador to Spain, and in 1629 to England; after which having in 1626 lost his first wife he married in 1630 a beautiful girl of sixteen years, and for another ten years till his death in 1640 he steadily pursued his profession at home.

The characteristics of Rubens' style were the natural life in his drawings peculiar to the Flemish School, added to the gorgeous coloring of the Venetian School modified by the harmony of light and shade learned from the three great masters of Italy. His invention was boundless; every variety of scenes, sacred, historical, domestic, and every species of subjects, landscape, animal and human seeming to be equally comprehended by his genius. He had great personal industry and system in his work, rising early, attending morning service at Church, drawing till breakfast, then meeting his pupils for his day's employ in instruction and supervision of their work. The more skilful of his pupils he employed to great advantage for his own purposes; setting them to work up the parts of his own ordered works, giving to those skilled in the separate details animals or human forms, flowers or fruit, landscape or sky; himself overseeing and directing the work of numerous hands thus employed. The works that bear his name number about fourteen hundred; many of which were executed in the manner mentioned, at second hand. He was also fond of collecting as well as executing works of art. His first extended personal collection he sold to the Duke of Buckingham to be taken to England. In making up a large subsequent collection he showed particular generosity as well as discrimination in patronizing promising young artists; among others purchasing the works of Vandyke thus giving the artist both the means of pursuing his art and a reputation as a master in it. Though in many respects objectionable as a model the style of broad and glowing coloring practiced by Rubens has made him a favorite artist, especially in the galleries of his native land and of Paris.

Rubens was succeeded by two eminent pupils; one of whom Jordaens excelled in the low life that sometimes entered into the themes of his master; the other of whom, Vandyke, became justly famed

for excellence in the more exalted aims of the Flemish School. Jacob Jordaens born at Antwerp A. D. 1594 studied for a time under Rubens' early teacher; but when Rubens settled in his native Flanders the skill of Jordaens in festive scenes drew Rubens' attention, and led him to receive and employ him as a pupil and worker upon many of his smaller pieces. Becoming successful as a sketcher of the low sportive scenes above which Rubens sought to raise the taste of his countrymen, he entered upon an independent and sometimes antagonistic career as an artist. He lived to a great age, wrought with industry and rare inventive skill; tending however to an exaggerated fondness for gross subjects.

Anthony Van Dyck, whose English title as Sir Anthony Vandyke, links his history to that of English painting, born at Antwerp, A. D. 1599, was at sixteen years of age a pupil of Rubens. His genius is said to have been first brought out when one of his fellow-pupils having accidentally brushed against the arm of a figure which Rubens had just left freshly painted, young Anthony relieved the anxiety of the unfortunate boy by restoring the arm so perfectly, that their master not discovering the change, called his pupil's attention next day to the arm as a happy effort of his own brush. At the age of twenty, in 1619, Vandyke went, at Rubens' suggestion, to Italy; some say jealousy leading the master to seek the absence of a rival, though Rubens' nature seems too generous to allow such a supposition. At Venice Vandyke studied with admiration the coloring of Titian and Paul Veronese, and changed his Flemish cold hues for the rich and mellow tints of Italian masters. Spending some time subsequently at Genoa and then at Milan, he returned after seven years, in 1626 to Antwerp, where, as already in Italy, orders for portraits and altar-pieces poured in upon him. For five years he industriously employed his brush; bringing out his Flemish master-pieces; among which Reynolds ranks his "Christ Crucified between the Two Thieves" not only as Vandyke's best Scripture study, but "one of the finest pictures in the world." Invited by Charles I. to England in 1632, ten years of anxious though eminently successful toil, attended by a sumptuous style of living, undermined the artist's constitution and brought him to an untimely grave. His latter and most brilliant period of his life belongs to English history: but his works up to the age of thirty-three years belonged to his native Flemish home, and are among the master-pieces of the Flemish School.

The incorporation of Flanders and of the Flemish stock into the

recently established kingdom of Belgium, makes Belgian artists to be lineal successors to the Flemish School. Among these Wappers and Gaillait have become eminent in different departments. Gustave Wappers, born 1803, receiving an early art training in the Academy of Brussels, went to Paris and imbibed a taste for the romantic style prevalent after the age of Napoleon. Returning to Belgium, he painted historic scenes connected with the knightly conflicts and royal tragedies of the stirring periods of French and Netherland annals, winning the admiring patronage not only of the Belgian king by whom he has been made a baron, but also of Louis Philippe of France. Louis Gaillait, born 1810, a student of painting at Paris, is also one of the ablest modern historic painters. The Belgian painters are in style more allied to the French than the Flemish masters.

SECTION 6. THE DUTCH SCHOOLS; THE EXAGGERATED NATURAL STYLE ORIGINATING WITH REMBRANDT; THE LOW LIFE OR "GENRE" STYLE WITH THE BREUGHELS; AND THE PASTORAL LANDSCAPE FAVORITE WITH THE DUTCH MASTERS.

The love of the humorous, implanted in man for a wise purpose, has found even in the best and greatest of men, from Socrates to men of modern times, a field for growth, a garden for special culture. It is a propensity specially liable to excess and abuse; as Cicero and other writers upon Rhetoric have shown. Artists have been among its most devout votaries; the ancient Egyptians mingling the sportive in the tragic battle-scenes pictured on the walls of their tombs; and the decline of Grecian art being marked by the same excess which made Aristophanes the corrupter of the Grecian drama. The effort to represent the ludicrous and grotesque in art springs from a genuine aspiration to copy Nature to the life as seen constantly in real scenes among the happy though uncouth laboring people; an aspiration dignified in the early efforts of such artists as Apelles and Lionardo. It was this generous yet dangerous yearning o young artists of cheerful spirit which became the pervading genius of the Dutch masters.

Until the rise of Rembrandt, early in the seventeenth century, the Dutch painters had followed the Flemish masters. Born on the Rhine near Leyden, A. D. 1606, Rembrandt was early allowed by his father, a worthy miller, to enter on the study of art at Amsterdam. Returning home at the age of twenty, he made his father's mill his studio; and it has been suggested that his peculiar power in

light and shade came from the practice of his art at this early ag in the lofty garret of this building with no other light than the roo window which served as a ventilator. Making a trip to the Hagu the sale of one of his pictures for one hundred florins, gave him consciousness of his power. Making Amsterdam his residence, h married into a family of his own low rank, had as his associates th common people of the town, and spent most of his leisure at th neighboring ale-house. His own independent bent and his associ tions, made the models of his study the grotesque attitudes and u couth habiliments of the jocose companions of his hours of recre tion. He became a rapid composer; executed numerous historic and Scriptural pieces as well as portraits; while mirthful scenes o low life were his preference. The vulgarity of many of his theme and his introduction even into sacred themes of forms, attitudes an accessories of gross conception, would have placed him in the ran of artists long since forgotten, were it not for that almost magic skill in Chiaroscuro which makes Fuseli call him "a meteor in art In portrait this fault could not easily enter. Rembrandt's style a painter was fascinating to the young and naturally jovial artis of Holland; his pictures were numerous and yielded him a larg income; his etchings, to which he devoted much time, were maste pieces; and he became thus a leader in a new school of art. Amon his able pupils were Gerard Dow and Nicolas Maas. Dow was to labored to be popular; in portrait spending five days in workin upon a lady's hand, and wearying his sitters by his slowness; y leaving behind him a large list of finely finished paintings o peculiar excellence in light and shade; painting portraits f the profit they yielded, but delighting in domestic scenes whe his power in grouping and shading could be displayed. Rem brandt had also numerous direct imitators; but his influen was yet greater in giving direction to a whole class of Dut artists; leading them to break away from the style of Rube the delineator of the grand in high life, and to delight in th quiet and sweetness of rural employ and pleasures. The degenera tendency of this style was developed in the repulsive scenes an figures favorite with the Breughels; its happier development fill up the long life of Teniers the painter of the common people's pa times; while its highest and purest aspirations appear in the charm ing natural landscape, the ideal pastoral, and the flower, fruit, fo and animal pieces to which the best artists of the Dutch School ha been devoted.

Jan Breughel, the father of two more eminent sons, born A. D. 1510, deceased 1570, preceding Rembrandt by several years, gave a partial tendency to the style fixed by Rembrandt; his themes being chiefly village festivals, gipsy scenes and bandit exploits; but he remained associated with Flemish artists. His two sons, Jan and Peter, born the one A. D. 1565 the other 1569, took somewhat opposite tendencies; though both tended to the father's peculiarity. The elder, called "Velvet Breughel," from his soft touches in coloring, after a tour in Italy, became eminent as a colorist of landscape back-grounds, and was employed in this special department by Rubens. The younger, called "Hell Breughel," from the demon-like pictures of which he was fond, seemed to dwell among witches, sorcerers, robbers and devils. The influence of these brothers, particularly of the latter, gave encouragement to an extravagance in picturing the darker features of human nature; which though in one sense natural are in themselves repulsive, and therefore are not only shunned by the truly cultured, but seek themselves to shun the world's gaze. Growing up at the same time with the coarseness in form encouraged by Rembrandt, this picturing of extravagant passion became an added feature of the style of the Dutch School.

A happier tendency began with David Teniers. Born A. D. 1610, his chief art training seems to have been under his father, and namesake; who delighted in humorous and sportive themes, such as rural festivals, ale-house comedy and grotesque accessories; but who was skilled in lifelike drawing and coloring. The son early caught the spirit of his father; and was fond of sketching scenes of peasants and artisans at their recreations. At one period he attempted the graver style of Rubens; but failing to meet in it his own aspirations, at thirty years of age he settled upon the *genre* or home scenes as his field. This he pursued till he was eighty years old with untiring interest and industry. His methods have been minutely described by students of his style. At the era of his effort to assume a graver style, he made his ground of a dark brown; but this he afterwards changed to a silvery light gray, and in later life when his best pictures were executed to a tremulous yellow brown. Upon a ground prepared with chalk or plaster of Paris, he scumbled tints of brown or pearly gray; next he sketched the figures and chief accessories in bistre; next he added the principal shadows in the same; next he worked in the half tones with delicacy and labored transparency; then as the chief work he added the coloring of the prominent figures, giving them a thick body of color to

indicate solidity; and finally throwing in skilfully adjusted sparkling touches and glaring tints he completed his work. Teniers was patronized by the Spanish and Swedish Courts; he was made by the Spanish Viceroy of the Netherlands superintendent of his gallery of Spanish and Italian paintings; during which time without having his own style affected by it he became an able copyist of Tintoretto, Paul Veronese and Rubens. His pictures are said to exceed in numbers 1000; and many are of large size. It has been remarked that "it would require a gallery ten leagues long to contain all Teniers' paintings." Their value, varying from $1000 to $10,000 each, is almost fabulous in amount. Teniers is the great link between the Flemish and Dutch Schools. The able masters in the style which Teniers ennobled are too numerous to be here mentioned.

While thus in the style called *genre* or home-like the Dutch School reached a high and independent excellence, pastoral landscape, with the accessories of animal, bird, fruit and flower painting, became a no less distinctive and a yet more permanent and advancing characteristic of this same School. At first the spirit of Italian ideal landscape was caught by Bril and followed by Both, Cuyp and others; their native wild and rough landscape scenery was attempted by Ruysdael and ennobled by others; while in marine views W. Vander Velde, in hunting scenes Wouvermanns, in animals Snyders, in fruit and flower-pieces Van Huysum, and the female artist Rachel Ruisch became eminent. This prevailing type of the later and ablest Dutch painters, favorite with the English race, has made the works of the Dutch School a special study with English critics in art.

Sect. 7. The early History of the native French School; its modification under Giotto and Lionardo; the classic style of Poussin and the landscape of Claude in the Seventeenth Century.

The French people from the days of Julius Cæsar occupying a middle position in the West of Europe have been in character as in location a connecting link between the North and the South. The face of their country and their climate has given them the physical hardihood of the English people and at the same time the passionate impulse of the Italian and the Spaniard. From the days of Charlemagne the French nation have aspired by neighboring conquests to increase their home borders, and by incursions into distant regions to acquire renown for prowess and to extend their commerce. Borrowing much from intercourse with and employment of the artists of other countries, in every era of their history the French have had

artists of great independence in their methods; and the French School has never lost its decided native character from the influence of the very ablest artists sent among them. The eras of their civil and commercial advancement mark very accurately the stages of transition and of progress in the history of French painting.

In the days of Charlemagne and his immediate successors the history of French painting is associated with that of Germany. The art at that period was chiefly missal illumination; the style of coloring was Byzantine; but in the drawing of figures in the picture illustrations the mark of native French vivacity was apparent. At a later day Flemish artists wrought in the North of France; a brief visit of Giotto to the South of France introduced a naturalness in design before unknown; and both these foreign influences tended to give a new impulse to the native independent French taste in painting. This movement culminated under the reign of Louis XI., beginning A. D. 1461; an era called by the French writers on Art the "Renaissance." The complete triumph of the royal over provincial and feudal prerogatives, the consolidation of the French nationality, the establishment of post roads and the enlargement of French commerce gave a greater comprehension to French artists. Among the leaders of this time was Jean Fouquet, court-painter to Louis XI.; who excelled in drawing animal and human figures in repose, though less skilful in adding action and expression; and who surpassed his contemporaries in perspective and chiaroscuro, though his coloring, especially in countenances, was too sombre in its cast. Rève of Anjou in the same age was noted; whose style partook much of the manner of Van Dyke. Even this age was but preliminary in the progress of the French School.

The history of the French School proper opens in the age of Francis I., from A. D. 1515 to 1547; whose conquests in Italy brought Lionardo in his mature age and other Italian artists of ability to the French capital. Francis collected from Italy casts of the antiques and invited Italian sculptors as well as painters into his dominion. The native founder of the then established French School, usually recognized as such, was J. Cousin, born A. D. 1462, whose matured powers were cultured but not denationalized by Italian influence. His work on art published at that era in the French language proved the power of the pen to awaken any people to love of art; while his "Last Judgment," now in the collection of the Louvre, shows that the genuine spirit of the French people is not one of mere frivolity. After him Vouet, born A. D. 1582; who, during

fourteen years practice of his art in Italy, caught something of the bold and even rude vigor of Caravaggio, softened somewhat by the gentle sweetness of Guido, and thus increased the tendency in art which French genius was naturally taking.

The first really great master of the French School was Nicolas Poussin. Born 1594, having studied under different French masters, but deriving his chief idea of expression and grouping from engravings of Raphael and his pupil Romano, Poussin early attracted the notice of the Italian poet Marino, who urged him to visit Rome. Foiled for years by want of means, at length at the age of thirty he reached that city; where Marino is said to have introduced him to Cardinal Barbarini with the characteristic announcement "Vederete un giovan che a la furia del diavolo," "Behold a young man who has the furor of the devil." For six years he studied the works of Titian and Raphael, enjoyed the acquaintance of Domenico, and especially devoted himself to drawing from antique sculpture; taking on most influence from the latter, yet retaining his native independent French style. Invited back to France in 1630 by Louis XIII. he found Vouet absorbing court patronage, and, impatient of rivalry, after twelve years of life somewhat harassed by envy at Paris, he returned in 1642 to Rome, where he peacefully wrought upon those great works which have made his countrymen proud of his fame, until his death in 1665. His themes were chiefly historical, both civil and sacred; his composition showed extended and accurate learning; his conceptions were sometimes gross as in his "Martyrdom of Erasmus," but in attitude and expression his designs are always alive with French vivacity; while in coloring he was intermediate between the dark Flemish and the light Italian methods.

The German critic Waagen traces three eras in his style; that of his early works at Rome, stiff in outline and having "the reddish brown in flesh which betrays his early residence at Rome;" second, his perfected study in composition and expression, and third, his excessive study of the antique. Of the latter characteristic Fuseli the Italian critic says, "Poussin painted basso relievo;" but to him as a general artist, Reynolds the English colorist attributes despite his faults, these three excellencies, "correct drawing, forcible expression and just character."

The counterpart of Poussin at this era was the artist sometimes classed as Flemish, Claude Lorraine; though he was French in name, native place, and patronage. Born A. D. 1600, only six years after Poussin, Claude at twelve years of age was left an orphan and

went to Freiburg to work at wood carving with an elder brother. His skill with his pencil led a relative, a lace-dealer, to take him to Rome. Managing to support himself with his pencil, his independent genius early became charmed with the architectural drawings of Waal, a German artist; and he went to Naples and studied with him this branch of art for two years. Conceiving this to be but an accessory of true art he sought the instruction of Tassi the Italian landscape painter at Rome. At the age of twenty-five he made a tour Northward through Italy and the Tyrol into Germany; and lingered a year at Nantes, in his native Lorraine, where he was employed by the Duke. Going hence to Lyons and Marseilles in 1627 he returned to Rome where he spent his long life of more than eighty years, admired as the sweetest of landscape painters. His favorite themes were landscapes, pastoral and classic. His studies were styles of architecture of every age, landscape groupings, natural scenery from the towering Alps to the plains of the Romagna, and especially the changing lights and shades belonging to every period of the day and night. In pursuing this study he visited the best specimens of architecture in various cities; spent months of roaming in Northern Italy; and often sat whole days and even nights intently watching every change in the aspect of the sky and earth till they were engraven as ever-varying pictures on memory to be drawn from at will. The hours of twilight, morning and evening, because of their richness of coloring, were favorites with him. He usually made his ground color a light gray, laying his warm colors in semi-transparent thinness on this for the distant half-tints, and giving a full body to the principal lights and the prominent figures. So bewitching in their illusion were the atmospheric effects he thus produced that no one has in this particular ever surpassed him in universal popular favor. In the drawing of his figures, however, despite all his special study at the Academy of Rome, he was defective; and sensible of this failure he would either employ another artist to work up the figures, or if wrought by himself he would humorously remark to purchasers that he charged for the landscape and threw in the figures gratis.

He was remarkable for suavity of temper and urbanity of manner; a favorite, as a gentleman with courtiers, as a bachelor with the ladies, and as a friend with the people at large. His works numbered not less than four hundred and twenty-five landscapes; while, so frequent were the attempts to sell pictures not his under his name, that he resorted to the expedient of copying in a book kept for private reference the designs of all his finished paintings. With

Claude the French School had reached a position beside that of any other nation, not excepting Italy.

SECT. 8. THE OPERATIC STYLE OF LE BRUN UNDER LOUIS XIV.; THE FÊTE STYLE OF WATTEAU UNDER LOUIS XV.; THE TEMPORARY REACTION OF THE NATURAL STYLE OF J. VERNET, GEUZE, AND OTHERS; THE GROSS TRAGIC STYLE OF DAVID DURING THE REVOLUTION; AND THE RESTORATION OF THE NATURAL STYLE UNDER DE LA ROCHE AND H. VERNET.

The central and commanding position of the French among the nations of Europe, made available for advancement and aggrandizement by their hardy energy and ambitious aspirations, must have placed them foremost in steady progress in art, had not these facilities been offset by another national trait of character. Mercurial like the Athenians, who worshipped their own temperament under the name of that god devoted to art in its low sense of artifice, and who sacrificed often for the merely novel the higher idea of beauty, the French people with all their dignified aspirings have often lapsed in their high career through an unworthy yearning to do "some new thing." In the history of French art this counteracting element has had an influence quite as marked as in their political career.

The brilliant era of Charlemagne succeeded by many alternations of retrograde and recovery, had its counterpart in the age of Francis I.; when, during the life of the three great Italian masters, the French School reached its acme of progress. The royal house of Valois had culminated, declined and been succeeded in 1589 by the Bourbon family; which reached its highest lustre under Louis XIV., whose long reign extended from 1643 to 1715. Under this monarch, who at the age of sixteen years began to show marked ability as a ruler, the military renown of France was exalted by conquests in Spain on the South and Flanders on the North; its commerce was so extended as to lead to the incorporation of a French East India Company; and its devotion to Science and Arts was witnessed in the establishment of the Academy of Belles Lettres and Inscriptions, and of the since world-renowned French Academy of Science, which dates from 1648. The style of art, especially of painting, partly from general influences surrounding, took a character in keeping with the style of architecture already noticed as the Louis Quatorze.

Among the painters of this age, whose chief employ was to design and execute, as they were called for, a series of immense paintings to adorn the new palace of Versailles, was Charles Le Brun, a pupil of Vouet, and a companion of Poussin in his visit to Italy. His

first great work, "Horatius Cocles defending the bridge," revealed his style as a man of genius; like Louis himself, forced by the spirit of his age to an artificial style of grandeur and to act a part on a stage of fictitious elevation. His series of pictures of the Life of Alexander, as has been said, are after the style of Louis Fourteenth's generalship, riding as he did into battle in a coach and six. His Scripture themes, as his Magdalen and Stoning of Stephen, are natural and truly expressive. Schlegel remarks upon an admirable group of family portraits by Le Brun, now at Berlin: "A painter, essentially a mannerist though really a man of genius, may in single works attain the highest excellence, if he be only forcibly driven from his ordinary style;" a remark suggesting a most important principle of criticism both in literature and oratory. A fellow-pupil with Le Brun, Le Sueur, an artist of less pretence yet of greater solid merit, for a time divided the meed of fame; but the popular preference went with the spirit of the French Court in extolling Le Brun and his operatic style. The series of twenty-four incidents in the Life of St. Bruno by Le Sueur now in the Louvre Collection present countenances of dignified expression; Le Sueur living in the sphere of natural life to which Le Brun only occasionally descended.

The age of Louis XV. was if possible an exaggeration of the spirit prevailing in the previous reign. Commerce extended beyond India to China; the Jesuits, in their energy as missionaries abroad and as propagandists at home, awakened the learned controversies with other orders of the Catholic Church which such men as Voltaire seized upon as an objection to Christianity itself; the manufacture of silk, porcelain and of tapestry was largely introduced; and a gallery of art, enriched with the paintings of Italian and other masters, was fostered by Louis. The leading spirit in art during this reign was Watteau, born 1684, deceased at an early age in 1721. In him religious themes were superseded by pictures of scenes attendant on religious and secular festivals; some of them ideal, others real. Horace Walpole has hinted the important criticism that the artificial style of Watteau is really an excessive imitation of the natural around him; the figures he introduces being the fac-similes of the conventional society in which the artist lived, while the stiff trees and garden walks of his back-grounds are exact copies of the clipped and mathematically exact realities then in vogue about Paris. Reynolds recommended "attention to the works of Watteau for their excellence in the florid style of coloring." Watteau was followed by a

numerous school of imitators whose style took the popular designation of "fêtes galantes."

One name in the degenerating school of this age, Boucher, calls for mention; if it were only that the judgment of a man, himself not specially refined, may be cited as to such artists and their works. Born A. D. 1704, and living till 1768, Boucher as an artist was a fit index of the Court of Louis XV. Passing his days among men of high life, corrupted with every vice, and spending his nights with courtesans, having as his subjects the nude forms of the lewdest females, Boucher's themes were the most sensual conceivable. Reynolds who visited him in his studio, when, advanced in life, he was still picturing obscene figures in the absence of a model, was as much offended with the faulty drawing his corruption had induced, as he was shocked by the conceptions to which his mind had sunk; possessed, as he felt him to be, of true genius. Of this artist, even Diderot writes: "I know not what to say of this man. The debasement of taste, of color, of composition, of character, of expression, and of drawing has followed step by step on that of morals. . . . I am bold to say that this artist in reality knows not what grace is; that he has *never* known what *truth* is; that all ideas of delicacy, purity, innocence, or simplicity have become entirely strange to him. I am bold to say that he has never for one moment seen nature; at least not that nature which is such as to interest my feelings, and yours, or the feelings of any decent child or any woman of sensibility." Though Boucher had around him a group of professed admirers, even the Court of Louis could not give dignity or influence to open vulgarity; and he had no imitators of any genius, as he had no patrons of intellectual refinement.

The era of Louis XVI., though opening with a forced glare of brilliance, was the twilight of a dismal night; the last glimmer of a fainting taper. Shocked by the moral tendency of the age, and disgusted with its culminating degeneracy in art, men of true genius in science, philosophy and art, retired to the pure retreat of quiet Academic shades; and when the terrific tornado of the Revolution swept over France, the world wondered at the number and the high worth of these true men, as much as they were astonished at their powerlessness to arrest the sweep of moral degeneracy when emanating from the places of power among a people. Among the artists who rose above their time was Claude Joseph Vernet, born 1714, at Avignon in the South of France; an artist worthy of his great namesake. The second in the line of a family of painters eminent for

four generations, he was first instructed by his father Antoine Vernet. In 1732, at the age of eighteen years, he went to Rome; where in the early period of his practice he was reduced almost to want at times, and had to paint a picture to obtain a new coat. At first the style of Salvator Rosa attracted him; but soon landscape, especially the marine views along the shores of the Mediterranean in the soft light of an Italian sky became his favorite study. At the end of twenty years of devoted diligence he had gained the reputation of the best landscape painter of his age. Invited by the same Louis XV. who was patronizing Watteau to return home and enter on public employ, on his voyage from Leghorn, in the midst of a terrific storm, he insisted upon being lashed to the mast, where he watched and studied the features of the sea, with all the enthusiasm of the Grecian Sculptor forgetful of danger as he studied the form of the lion glaring upon him from his den. Arrived in Paris he received a commission to paint views of the principal ports of France; and the fifteen grand master-pieces now in the Gallery of the Louvre occupied his brush for ten or twelve years. Some defects are found in his drawing of trees and shipping: but French critics are enthusiastic in his praise; Diderot calling him "a magician" who "creates a country, putting mountains and vales in it, and then peoples it at his will;" while the general admiration of his skill is attested by the fact that nearly every one of his two hundred or more landscape views have been copied in engravings and published in different countries of Europe.

Greuze, a native of Burgundy, and hence sometimes claimed as a Flemish painter, born A. D. 1726, and contemporary many years with Vernet, had that true spirit of art which no fashion of a day can affect. Studying his art first at home, then in Rome, he soon excelled in simple home scenes; but ambitious to gain admission to the French Academy, the requisite for which was the production of a historical painting, he strove to force his genius out of its bent, and designed and executed a historical piece, "Severus reproving Caracalla." The effort was unnatural; it proved both in itself and as to its end a failure; but the sweet grace of two of his early domestic scenes, "The Father explaining the Scriptures to his children" and "The Paralytic Father," forced the Academy to overlook their restricting rule and to admit him for his success in "genre." His numerous paintings in the same style, about one hundred and seventy-five in all, executed during a long life till he died in 1805 about eighty years old, sought by amateurs with the

greatest avidity, are a mark of the charm by which he holds the common heart. The German Waagen compares him to Sterne, the sentimental writer of England, and adds as his chief power this; "the natural characteristics of France are seized by Greuze with the same success as those of England by Wilkie."

The Revolution swept like a tornado over France; about five thousand nobles as well as the king and queen falling a prey to its fury. Before its commencement, during its rage, and after its final force was expended, the versatile painter David was constantly a favorite; an artist of genius, and able alike to please Louis XVI., Robespierre, or Napoleon by that power of adaptation so peculiar in French character. Born in 1748, having studied under different French masters, and at the age of twenty-seven years having won a prize for one of his paintings, he went in 1775 to Rome, where he became sharer in the popular fondness for the antique, rekindled by the labors of Winckelmann and the excavations at Herculaneum and Pompeii. During alternate sojourns at Rome and Paris he devoted himself to classic themes; his "Horatii" especially giving him fame in Italy and France alike, and making him a favorite with Louis XVI. When the Revolution triumphed, the stern virtues of Roman Republicanism pictured in such themes as "Tullia driving over the dead body of her father," commended him to the School of Robespierre; while his skill as a chosen manager in reconstructing the classic age in the fête pageants of the day made him the idol of the French Parisian democracy. When Napoleon succeeded, the same general style easily adapted itself to produce Leonidas at Thermopylæ, the Coronation of Napoleon as in a Roman triumph, the Crossing of the Alps after the example of Hannibal; whose spirited conception in the engraved copy is familiar to Americans. At the downfall of Napoleon, allowed to become an exile from his native France and in retirement at Brussels, David still showed himself master of his situation by the power of adaptation in classic art; his Wrath of Achilles" and his "Mars discerned by Venus" being, themes for the times. As an artist David has found admirers and censurers, influenced doubtless by political predilections and moral convictions. All acknowledge his power in expression; and his heads, in portraits as those of Marat and Pius VII., as well as in his ideal pieces, are finely conceived. He was remarkable for winning young artists to his studio, and for his controlling influence over a large class of able painters who followed his teachings.

The quiet that succeeded the storm of the French Revolution

nurtured and brought out choice spirits in art; whose success in styles ever varying, each popular in its day, illustrates the power of novelty, ever associated with the higher elements of art, in the taste of the French people. Among these Gros, a pupil of David, born A. D. 1771 merely modernized his severely classic style by employing his method on themes of contemporaneous history. His "Napoleon on the Bridge of Arcola," executed in 1801, called him into notice; his "Napoleon visiting the sick at Jaffa," awakened perfect enthusiasm for his style; while his "St. Genevieve protecting the French Monarchy," executed in the interest of the restored Bourbons, brought him 150,000 francs and the title of Baron. Another school, the "Romantic" crowded rapidly aside his culminating fame; and as is supposed in chagrin, he drowned himself in the Seine in 1835.

A prominent leader in this next succeeding school was De la Croix. Born in 1799 he did not reach maturity till the restoration of the Bourbons and the decline of David's fame. His first pictures were characterized by brilliance of color unlike the sober hues of the classic; his employ in Morocco where he sketched every variety of gay costume gave more decided cast to his style; and his employ in decorating the Bourbon Palace at Paris brought fully out his power in enthusiastic action and gay coloring which has made him head of the Romantic School. The head of quite another School the "Eclectic," was De la Roche. Born 1797, a pupil of Gros, he showed early an independent judgment and remarkable skill in realizing his own conception. In disingenuous regard to the supposed interest of an elder brother who had devoted himself to historical painting he sacrificed his preference and devoted himself to landscape. A thorough student of the science of art as well as a master in drawing, design and coloring he came to excel in almost every department; his scenes from English and French history make him a man of his day; his portraits of the ablest men of his times, Guizot, Thiers, Lamartine, and of his father-in-law Horace Vernet giving him patronage in the lucrative department of his profession; his sublime sacred compositions, such as his head of Jesus, giving him access to the heart of Christian sentiment; while his labored master-piece, the "Palais des Beaux Arts," or Assembly of Arts ancient and modern, is in drawing and grouping, in individual expression and general tone worthy of any of the artists pictured in it from Apelles to Lionardo.

The ablest artist of this age in the French School probably is Horace Vernet. The fourth of the line of artists in his family, in which Claude Joseph had already been a leading spirit, born 1789

he had early instruction from his father who had successfully painted several of the battles of Napoleon. Entering the army at eighteen, but retiring from it to resume his pencil after two years, he seems to have made his practical acquaintance with military details to contribute simply to his art. Devoting himself to the representation of the rapidly succeeding and peculiarly stirring events of his country's history, especially in its military successes, he has been equally honored by Napoleon I., the Bourbons, Charles X., Louis Philippe and Napoleon III. Less gorgeous than De la Croix, less dreamy than De la Roche, and more natural in every way than either, he makes the canvas present the real scene of exciting conflict; the fascination of his style being, that the beholder ceases to think of the drawing or color, all is so natural.

CHAPTER IX.

THE LATE DEVELOPMENT OF MODERN PAINTING IN ENGLAND AND AMERICA; COMPREHENSIVE IN SUBJECT AND AIM, AS WELL AS IN THE NATIONALITY OF ITS ARTISTS; NATIVE IN CONCEPTION BUT CULTURED IN STYLE.

Though among the earliest of the nations of modern Europe to attain eminence in literature, philosophy and science, England has been late in developing native genius in art. As, however, England boasted her Shakspeare, her Bacon and her Newton, before men of genius arose who appreciated art as an exalted employ, so in Greece Homer, Thales and Pythagoras antedated Phidias and Apelles. But, still more, the English have as a people resembled the Romans rather than the Greeks; their energies turning rather to the sturdy and practical pursuits of men and of nations; contented to have both their works of art, and their artists, as an interest secondary in importance, imported from among people more given to such pursuits. The Americans, again, besides partaking in their early history of the national traits of their chief mother land, have had a wide area to subdue, governments and institutions of every kind to originate; and this employ as in the youth of other nations has deferred the period of art culture. For this very reason however foreign artists of culture have found a most inviting field among the English and American people; developing a style that

has united the culture of their foreign education and the comprehensiveness in design naturally caught from meeting a new world of ideas. Meanwhile native artists, both in England and America, stimulated by foreign rivalry, have risen to eminence by the force of native skill and energy, often chastened by a thorough art education, finished if not originated in European studios.

Sect. 1. The early English taste in Painting as developed first by Italian and later by Flemish artists.

The progress of the arts of sculpture, architecture and painting is usually an associated advance. We have already observed in the history of improved architecture in England how in early times the old Roman vied with Saxon taste, and how in later times Italian artists from religious congeniality as well as other causes were drawn to England to find employ, until the spirit of the Reformation gave German and Flemish artists more access to English patronage; while all the time an influence was at work gradually bringing forward native architects, among whom finally great masters arose, superior to their foreign teachers and originators of national methods. The same steps of progress are observable in the history of painting.

The oldest portraits preserved of English kings, as of Richard and John of Gaunt, also the paintings in the ancient churches, are on wood instead of canvas, and in the same stiff method of drawing and coloring found in Lombardy. Giotto did not extend his journey northward further than the South of France; and the leaven of his spirit was not infused into native English as into French art. At a later period, however, Italian art was appreciated; for, while Francis I. had succeeded in drawing Lionardo to Paris, Henry VIII. was trying, though unsuccessfully, to negotiate with both Raphael and Titian to visit London. At this period, as indeed prior to it, the names of Italian artists, usually however of secondary ability, are mentioned in the current history of the times.

Under this monarch, mainly from religious reasons, the supply of artists began to be looked for from another quarter than Italy. At an early period of his reign, which began 1509, John of Mabuse a Flemish artist, when quite a youth came to England and became eminent as a portrait painter for the court and nobility. He also executed Scripture pieces; one of which the "Descent from the Cross," painted for the Cathedral of Middleburg, since destroyed by fire, had such a fame as to lead Albert Dürer when on his second tour in the Netherlands, about 1520, to visit England in order to examine it.

At a somewhat later period, about 1527, Holbein, who had become intimate with Erasmus the earnest Dutch leader of the Reformation, popular in England as well as on the Continent, went to England introduced by Erasmus to Sir Thomas More. Though still claimed, from his nationality, as one of the great masters of the Flemish School, Holbein became a precursor of the English School proper; which was not fully established till two centuries later. After the age of Henry VIII., Holbein was honored and influential as an artist through the short reign of Edward VI. to the second of Mary's four years' reign, leaving several pupils and imitators, among whom Sir Anthony More was eminent. Holbein's chief success was in portrait; in which as already mentioned the color, the expression of features and the prominent relief given by his shades are chief excellences. His few historical pieces, in distemper as well as in oil, show that had his engagements allowed he might have excelled in this department. Above all, his exquisite skill in engraving, of which his "Dance of Death" is an immortal monument, planted in England a germ of native art afterwards to be matured.

The long reign of Elizabeth was more noted for improvement in architecture than in painting; but the reigns of James I. and Charles I. were an era in the history of English painting. Under James the Duke of Buckingham became a munificent patron of art; making large collections for his own established gallery; purchasing among others the entire collection of Rubens, whom he met in Paris about 1622, near the close of the reign of James. Charles I. seems to have imbibed an early taste for art; himself taking lessons in drawing and oil painting. In the fourth year of his reign, 1629, according to the sagacious policy of the little power of Flanders, Rubens, who had been a welcome and hence successful ambassador to other courts, was sent to England. Charles received the great painter with enthusiasm; and as a recompense for his fine painting of "Peace and War" conferred on the artist the order of knighthood. Shortly after Rubens' return to Flanders, in 1632, Charles invited Vandyke to his Court, soon knighted him, and appointed him Court Painter with a pension for life. The touching emotion which he threw into his Scripture themes was tempered into a fascinating animation in the portraits which formed his chief labor for about nine years in England until his death in 1641.

The domicil of three of the great Flemish masters so long a time in England naturally gave a turn to national taste in art; while too their common sky, habits and cast of mind made the English and

Flemish taste in art specially to correspond. Meanwhile the collection of the Duke of Buckingham, and specially the gallery of Charles I., including among others the valuable collection of the Duke of Mantua purchased at great cost, kept alive a love for Italian art. The Vandalism of the Revolution under Cromwell scattered these treasures; and a decline in the progress of art in England followed, from which the nation did not fully recover during the reign of four successive sovereigns of the House of Stuart.

SECT. 2. THE EARLY NATIVE ENGLISH MASTERS, BEGINNING WITH HOGARTH; THE FIRST ENGLISH SCHOOLS ORIGINATING WITH SIR J. REYNOLDS IN PORTRAIT AND GAINSBOROUGH IN LANDSCAPE.

During all the long period of tutelage under Italian and Flemish masters, no single native artist of eminent merit and independent spirit arose in England; and it was truly a native and spontaneous germination and growth when the first masters of the English School appeared. Among the occasional names of English painters found in critical works, like that of Walpole, the following are most noteworthy. Nicolas Hilliard, born A. D. 1547, deceased 1619, was both limner and jeweler to her majesty, Queen Elizabeth, and excelled in miniature portraits; of whom an English work on painting published A. D. 1598, says, "Limnings were much used in former times in Church Books; as also in drawing by the life in small models of late years by some of our countrymen as Shoote, Betts and others; but brought to the rare perfection we now see by the most ingenious, painful and skilful master, Nicolas Hilliard, and his well profiting scholar." In the same age Isaac Oliver, and a generation later, A. D. 1594 to 1654, Peter Oliver, his son, were eminent; the former as a miniature painter in oil and water, the latter as a copyist, chiefly in water, of larger paintings. Wm. Dobson, born A. D. 1610, deceased 1646, who educated himself in art by copying Vandyke and Titian, and whom Vandyke meeting by chance and appreciating his merit commended to Charles I., was made Court painter after Vandyke's death. His short life of self-culture, won for him the name of the Tintoret of England; and had he lived the English School might now rank Dobson as its head.

To Wm. Hogarth is due the honor of giving a decided spring and an original cast to native English genius for painting. Born A. D. 1697, when a boy his school-books became noted for his original illustrations. He was apprenticed to a silver-smith who employed him as an engraver, and he saved leisure hours for drawing from

nature; both arts preparing him for his future career. When in 1718, at twenty-one years of age, his apprenticeship ended, he attended lectures on art by Sir John Thornhill then Court painter, and drew from life at the London Academy. Devoting himself for some years to portrait painting, in 1730, he privately married, much to the offence of the family, the daughter of Sir John Thornhill; but soon was able to make them proud of the alliance. In 1734 he first painted, then engraved his six pictures of the Harlot's Progress;" which gave him at once a renown as the first genius in English painting. His following works, in a mingled satirical and tragic style, gained him a popularity with the common people which prevented many intelligent critics of his own and later days from overcoming the natural prejudice that his foibles as well as his lack of higher refinement awakened. Hence Walpole deems him "no painter;" while Charles Lamb regards him the true type of an original and decidedly English artist; remarking, "Other pictures we look at, Hogarth's prints we read." His prints, or engravings, were in fact a greater success than his paintings; his "Marriage à la Mode," selling in his lifetime for £19. 6s., though fifty years later it sold for £1,381. His work entitled "Analysis of Beauty," published A. D. 1753, has many practical suggestions of value; though faulty in its leading principle, that the curved line, a term verily indefinitely analyzed, is in itself a line of beauty. Hogarth died in 1764. His familiar portrait, a hale, jovial, somewhat haughty English face, with his favorite dog perched by his side, is suggestive of his place in English art; the rude but powerful genius that broke down with scorn the trammels which had bound his aspiring young countrymen to the rank of mere copyists of the Flemish and Italian artists, and by his pen and brush originated an English School.

The recognized founders of the English School of Painting, Reynolds in portrait and Gainsborough in landscape, had reached the maturity of their powers, though not of their fame, while Hogarth was still living. Joshua, afterwards Sir Joshua Reynolds, the son of a clergyman, born 1723, educated in a school kept by his father, was at eighteen years allowed his bent and placed in the studio of Hudson a portrait painter. After two years' study, followed by six years' practice of his profession, he went to Italy and spent three and a-half years. His studies here led him to seek the rich coloring of the Venetians with the transparence of Correggio. In 1752, at the age of thirty-one years, he returned and settled in London, securing at once the reputation of the best of English colorists; though the

neglect of his early education left an abiding defect in his drawing which no after effort could fully overcome. Being of a social disposition, literary in education and tastes, he became one of the founders and chief ornaments of the Literary Club in which shone the galaxy of Johnson, Burke, Goldsmith, Garrick and others; illustrating again the fact already established in ancient Greece and modern Italy that only an age of high literary culture, and one that reaches artists with its refining influences, can give genius in art a direction which will lead it to immortality. His fame overburdened him with applicants for portraits; he remained unmarried, wedded only to his profession and literary companions; his income became enormous; and his press of business compelled him to employ other artists to put in the draperies and costumes of his figures. Devoted chiefly to portrait, he found time for historical and devotional themes; and his "Ugolino" and "Hercules" are chief historic gems in London and St. Petersburg, while his "Holy Family" and his "Kneeling Samuel" are familiar in the Bible prints and mantle statuettes of thousands of Christian households. Reynolds himself lamented the defect of his early training in drawing; while, too, his extraordinary success in coloring is offset by a now revealed lack in chemical knowledge, which has caused some of his newly tried pigments and vehicles to fail in permanence. Moreover, masterly as were the effects he sometimes produced, his own statement was, that there was no *science* of coloring; at least he had found none; for his finest successes had been chance results, and he could not repeat them. He died A. D. 1792, in his sixty-ninth year.

While Reynolds became the acknowledged founder of the English School in portraiture, an artist of no less genius, though less popular and genial in nature, took the first rank in landscape. Thomas Gainsborough, born A. D. 1727, at ten years of age was remarkable for capacity in drawing, and at twelve years had learned coloring. At fifteen years he commenced his art education and soon obtained proficiency in portraiture; though landscape was congenial to him, being in harmony with his retiring nature. At the age of nineteen he married a lady of beauty and fortune; which contributed greatly to his advancement. He was honored by the London Academy to which he contributed often; though alienated for a time by a supposed rivalship in Reynolds. Their departments however were too diverse for rivalry; and Gainsborough is the recognized head of the English School in landscape. He died at London in 1788 aged sixty-one years.

Contemporary with the leaders in the English School were other aspirants, injuriously sensitive because not first in fame; but for whom it was a sufficient praise to be second to such primates. Among these Richard Wilson is prominent in landscape. Born A. D. 1713, painting portraits for a time with limited training, in 1749 he visited Italy where by accident his power in depicting landscape was revealed; and painters like Mengs and J. Vernet bought his pictures. Returning to London in 1755 his "Niobe" gave him the first rank among landscape painters. In him, however, as often, an unfortunate harshness and fretfulness of manner lost him the esteem of brother artists and the patronage of the public. For twenty-five years he prosecuted his toil, selling his works for the one-hundredth part of the sums they have since brought. In portrait and historic painting John Opie had merit. Born in Cornwall A. D. 1761, the son of a carpenter, opposed in his early fondness for art, by self-culture he gained such facility in portrait painting that Dr. Wolcott brought him to London as the "Cornish wonder." For a year his studio was thronged with the élite of London; whose portraits he executed with vigor and truth though with lack of finish and delicacy. Losing his popularity as suddenly as it was gained, he devoted himself to the study of literature and science as subsidiary to his art; and, aided by the scholarship of his wife, the popular authoress, he turned his efforts to historical painting. His subjects show his early characteristic homely truth and vigor in design and drawing, with the added excellence of great purity in color. Fuseli regarded his "Murder of James I." equal in coloring to Titian. At a somewhat later period James Northcote, an author as well as painter, after studying some years in Italy and then practising for a time portrait painting, executed for the Shaksperian Gallery scenes in English history which won for him a reputation. Apparently outrun, however, by rising competitors he made the mistake of repining rather than of generously breasting the fluctuating tide. His Lives of Reynolds and Titian are his enduring monument.

The diversity of nationality observed among the English painters of this era, as well as the scope and originality of their themes and styles, is a note-worthy characteristic of the English School. Barry of Cork, Ireland, who at fifteen was marked for his genius in drawing, and who at twenty-three had executed a historic painting which led Burke to take him to London and afterwards to aid in supporting him in Italy, was generously received by Reynolds and other

English artists; and but for his native sensitiveness, which grew into censoriousness, his able designs, classic and historical, would have brought him liberal patronage during his lifetime, as they have gained him fame since his death. Canova said of Barry's "Victors at Olympia," he would not have grudged a journey to England to see it; but the artist lived in a filthy tenement never swept, and died on a rickety bedstead with nothing upon it but an old blanket nailed to one side. Fuseli, a native of Switzerland, encouraged by Reynolds, spent eight years studying art in Italy; and though failing as an artist because his boldness of imagination surpassed his skill in execution he became eminent, though not always judicious, as a writer and critic upon art. The two early and able American artists, Copley and West, as we shall see, were made and treated as native in the comprehensive policy of the English School.

Sect. 3. The English Schools, Masters and Critics in Painting in the Nineteenth Century.

It is impossible that contemporaneous history should be either comprehensive or impartial. It is in time as in space: the aspect of an age like the face of a country must be seen from a very distant point, in order that its entire range, with its marked features, may be understood; and hence no contemporaneous history can be comprehensive. It is, yet more, in the brotherhood of art as in domestic connections; no one can allow that any child ever came into the world quite equal to the darling of one's own maternity. In the rapid spring given to art during the last half-century in England, the ideas of different ages and schools have been revived and given a national cast; the extreme natural of the Pre-Raphaelite Schools of Italy, and the value of oil as a vehicle, have been theoretically and practically reconsidered and tested again; portrait, low-life, history, and especially landscape have given variety of themes and comprehensiveness of study; while artists and amateurs have employed the pen equally with the pencil to advance the progress and widen the field of national art.

In portrait Lawrence in England and Raeburn in Scotland, early in the century, gained the highest repute, and the insignia of knighthood as its courtly badge. Sir Thomas Lawrence, having at six years drawn pencil portraits with admirable skill, having at ten years painted Scripture themes and at thirteen years won the prize from the Society of Arts at Bristol for a copy in crayon of Raphael's Transfiguration, began at eighteen his career of forty years as por

trait-painter at London. George III. appointed him Court-painter to succeed Reynolds; at Napoleon's Fall the Princes of Europe employed him on the great work of his life the taking of the portraits of the generals, British and Continental, who were prominent at the Battle of Waterloo; but while flattered by courtly attentions he was generous to his brother artists, and generally beloved as a man while popular as an artist. Sir Henry Raeburn, born at Edinburgh, having early gained note as a portrait-painter at home, visited Italy at the suggestion of Reynolds; and returning to the Scottish capital, became for thirty years the leading portrait-painter in the North. His portraits of Sir Walter Scott and most of the leading men of Scotland in literature, philosophy and politics are treasures in history as they are gems in art. Contemporary with these artists, though born some years later, was John Jackson, next to Lawrence in popularity, and eminent for the vigor he threw into countenances. This energy, accompanied, as was natural, by rapidity of execution, betrayed him into an excess leading to carelessness in finish. He is said to have once painted on a wager five portraits in a day; for each of which he received twenty-five guineas; making the product of a single day's work more than $600.

In history, fiction and low-life eminent English genius has been developed during the present century. Haydon, devoted through a life of disappointment to an ideal of "high art," struggling with debt, alienating friends by his impetuous temper, and finally committing suicide at sixty years of age, deserves mention as an able designer, especially in his Scripture themes. Etty, disheartened by early failure as an applicant for Academic honors, encouraged by Lawrence, became one of the best of English colorists: his reputation as a historical painter beginning with his glowing picture of Cleopatra, radiant in her nude loveliness heightened by the contrast of the gorgeous equipage around her. Wilkie, knighted as Sir David Wilkie, a native of Scotland, is the leading artist of the age in "genre" or low-life. Among the numerous works in his early and best, because natural style, which English and European princes have sought, his familiar "Sir Walter Scott and his Family" and his painting for the Duke of Wellington "Chelsea Pensioners listening to the News of Waterloo," are monuments of true genius in their department of art. Stothard, in an humbler but exhaustless field has enriched the works of the best English poets by his expressive designs; no less than five thousand specimens having come from his pencil. The richness and fertility of invention which was essential for such exhaustless variety

is illustrated by his habit of constant rambling in the fields, not only with his pencil to sketch the form of every striking grace in the bend of stalk or tendril, but also with his box of colors to copy every new variety of rich hue in insect or flower. One day painting a sylph he was trying to shape the wings; when, a friend suggesting a butterfly's as the model, forth into the fields hied the artist and rested not till he brought back to his studio a rare collection from which to choose.

It is in landscape, however, that the truest native English genius for painting has been brought out. The name of Turner stands deservedly at the head of this list. Born 1775, at five years of age his genius was discovered and encouraged by his parents. For many years his talent was limited to drawing, painting in water-colors, and sketching for book illustrations. His skill in the management of his lights was remarked by critics, and his future success in landscape was predicted. Made a member of the Royal Academy in 1802 he attempted higher studies, making first the English landscape painters Wilson and Gainsborough, and afterwards Claude his model. At a later period, as a student of nature and art he visited France and Switzerland, roaming alone and on foot and sketching the wildest as well as brightest scenery. His truth to nature in sky and cloud, in foliage and in water views, without panegyric, surpass perhaps the attainment of any other artist ancient or modern. His later style is founded on the idea of sketching in a picture only narrow ranges of view immediately before the eye without turning it, giving vivid distinctness to a narrow tunnel-like vista, encircling this clear sight with the cloudy rim of indistinct surroundings really belonging to fixed vision, and leaving the corners of his canvas, outside of this ellipse of cloud and centre of fascinating light, a perfect blank. This later style of Turner, though eulogized by his panegyrist Ruskin, is regarded by many critics as a degeneracy from the true ideal of his prime as a painter. His paintings, drawings and designs, amounting to thousands in number, are justly treasured as a rich legacy by the English people.

After Turner followed many less comprehensive landscape painters. Constable, whose early bent in art was exhibited when, to Sir George Beaumont who asked, "What style he proposed to adopt," he replied "None but God Almighty's style," excelled in rural scenes. He was especially successful in those transient aspects of landscape, dew on foliage, falling rain, etc., which few in ancient or modern times have attempted. Morland, whose father, an artist, availed himself of his

son's early genius from the time he was fourteen to twenty-one years, painted without any regular training the simple and quiet aspect of English farms with hedges and pools; excelling in portraying domestic animals, especially the pig. The unnatural restraint of his youth seems to have been followed by a reaction to unrestrained license; he gave himself up at the age of twenty-seven to drinking; and though he lived to the age of forty-three years, never took his brush except when compelled by want. Collins, having imbibed his ideas of art from watching Morland at his work, when compelled on occasion to raise money to pay his landlord, painted, without instruction, a picture that revealed genius. He afterwards practiced at the London Academy and was eminent for coast views of fishermen and their families. Among the most thoroughly cultured of English artists of the present day is probably Charles L. Eastlake. Educated first in London then in France and Italy, and having extended his researches into Greece, his Scripture and ideal themes, have made him an able master as well as critic, and have won for him an order of knighthood.

The most admired of English landscape painters, following Turner, however, is probably Landseer. Edwin, afterwards Sir Edwin Landseer is of a family devoted to art; his father and two of his elder brothers being distinguished as painters. When a mere child he drew animals with a peculiar expressiveness; his father encouraged and directed his gift, leading him into the pastures to copy the form and study the color of different animals in varied positions; and at fourteen years he had a great collection of spirited sketches of domestic animals, including dogs and cats, as well as horses and the nobler animals. At sixteen he executed the famous St. Bernard dogs rescuing a traveler from the snow; which his father engraved, and made his very best work in that line of art. From the first Landseer continued to be self-educated; his only foreign education consisting of a sketching tour through the Highlands of Scotland. At the age of twenty-four he was made a member of the Royal Academy; having already begun that succession of landscape sketches relating to the chase and the habits of wild animals, like the deer, which have made him the most popular because the most life-like of delineators.

The English School in "Water Colors" has won to itself much attention and esteem. It was established about 1750 by Sandby and others. When about fifteen years of age Turner was drawn into its circle by a friend of the school; and his first picture exhibited at

the Royal Academy was an architectural view in water colors. His success in this attempt led him for ten years to devote himself to this branch of art, till he was drawn to the higher department of landscape in oil. Among those who have become noted in this school are Prout in architectural views, and Fielding in wooded scenery; a peculiar freshness and clearness of hues being afforded by water as a vehicle, which, as we have seen, led M. Angelo to prefer the freedom of fresco to the constraint of oil coloring. A movement towards a new, or revival of an old style of art, has more recently been made by W. H. Hunt, born A. D. 1827, and yet young, and by an association of kindred spirit, who have taken the name "Pre-Raphaelite Brotherhood." The movement proposes a return to the themes as well as the styles introduced by Giotto; the subjects being either religious or exhibitions of passions promotive of the higher virtues; and the method of drawing and coloring discarding the rules fixed by the experience of the schools and depending on an immediate study of nature. Virtually a revival of the impassioned style, this movement seems as in ancient Grecian and modern Italian art to be the natural tendency of a class of human sensibilities, found both among artists and their patrons.

The rise and progress of the art of painting in the native English School has been as much marked by its original critics as its artists. The Scotch metaphysicians have had their share of influence in giving tone to the progress of English art. The "Elements of Criticism," by Henry Home, Lord Kames, which appeared in 1762, though only indirect in its bearing on art criticism, suggested important principles to guide both the artist and his patron. Burke turned aside from his forensic disputations not only to enjoy the literary luxuries of the club of which Reynolds was an active founder, but to discuss in an elaborate treatise the principles of the "Beautiful and the Sublime." Alison, the cultured and eloquent Scotch divine, published, first in 1790 and again in a revised form in 1811, his "Essays on Taste;" advocating the idea that beauty is not a quality in objects so much as a moral or æsthetic association of human sensibilities. The two former works were the natural fruit of the opinions of Locke and Reid and the latter of Berkeley in their metaphysical treatises.

As a peculiar consequence of the literary spirit and taste of the English people nearly all English artists have been theoretical as well as practical, writers as well as painters; and some have succeeded better with the pen than the brush. Of this fact Hogarth's

Analysis of Beauty, Fuseli's Lectures on Painting, Reynolds' Miscellaneous Writings, Hay's admirable treatises, and Eastlake's scholarly History of Oil Painting are but specimens. The rapidly succeeding volumes of Ruskin are at once an indication of the new and native field for criticism now open in England and America; as well as the popular demand for information in this department of liberal study. Even the works of female authors, such as Mrs. Jamieson and Lady Eastlake, have been favourably received by both the British and American public.

Sect. 4. The History of American Painting prior to the War of American Independence; with its chief Masters, West and Copley.

If the rise of a native school of painting in England was delayed even till the latter part of the eighteenth century it cannot be surprising that in the American colonies the demands of a new country should exclude the patronage requisite to the rise of native artists. It is remarkable, however, that at the very era of the rise of the first native school in the mother country there should have sprung to view in the dependent colonies two men whose genius in art would shine as two of the brightest stars in the British Galaxy. These two native American artists were Copley and West; one born in Boston A. D. 1737, the other in the heart of Pennsylvania A. D. 1738; the former rising to light amid the unpropitious shades of Puritan simplicity; the latter struggling into day from under the more oppressive clouds of Quaker scruples, and in a wilderness remote from any surroundings calculated to direct the mind towards art.

Among the earliest painters who came from the old country to practice their art in the new world was John Smibert; who, in 1728, accompanied Dean, afterwards Bishop Berkeley to Rhode Island on his errand of establishing a Missionary College in the colonies. Smibert seemed to partake of the enthusiasm which drew from Berkeley the famous stanzas beginning, "Westward the star of Empire takes its flight." After the failure of Berkeley's scheme, Smibert went to Boston, where he was eminent as a portrait painter till his death, in 1751. He left a historical painting, prized in its day, now at Yale College, giving the group of Berkeley's family at Newport, Rhode Island. Smibert's influence gave a spring to a native taste which long exerted an influence at Newport and Boston, and which was seen in the developement of Wollaston and Blackburn, and especially of Copley, Trumbull and other later American artists. Among others who are remembered in the annals of the time are M.

du Cimitière, a Genevan, who settled in Philadelphia about 1760 Robert Treat Payne who came to America immediately on the close of the war in 1783, sporting the title, "Painter to His Majesty," and obtained pupils in Philadelphia; and a painter by the name of Wright who settled in New Jersey.

The influence of the mother country had caused native artists to be undervalued and thus to be depressed. Hence, when after the establishment of the American nationality a great desire was naturally awakened to obtain the likenesses of the patriots of the Revolutionary struggle, and Washington and others were besieged by artists requesting sittings, no single native painter of merit equal to the demand appeared. When in 1785 Hopkinson, himself an artist as well as politician, wrote to Washington recommending to his patronage Robert Edge Pyne, Washington thus responded to his humorous friend: "I am so hackneyed to the touches of the painter's pencil that I am now altogether at their beck; and I sit like 'Patience on a monument' while they are delineating the lines of my face. It is a proof, among many others, of what habit and custom may accomplish: at first I was as impatient at the request, and as restive under the operation as a colt is under the saddle; the next time I submitted very reluctantly, but with some flouncing; now no dray-horse moves more readily to his thills than I to the painter's chair." Not only Pyne, but M. du Cimitière just mentioned, took also portraits of Washington, Gates and Steuben, which were regarded as excellent, and were engraved afterwards at Paris. Portraits of Washington were also executed immediately after the war by Joseph Wright of New Jersey, by Wm. Dunlop who afterwards became more noted as a writer than an artist; and by Rob't Fulton, then less than twenty years of age; who began his fame as a miniature painter at Philadelphia. The indifferent character of these works, which would naturally invite the best talent in the art, indicates how little progress had been made; while at the same time the number and youth of the aspirants for distinction as painters gave early promise for a national school of American artists. Copley and West, from their tastes, and their life-long domicile, rank with English as well as American artists.

Benjamin West, born in Springfield, Penn., A. D. 1738, of Quaker parentage, was, when a mere child, fond of drawing and painting birds, flowers, and other objects; his brush being of his own manufacture from the hair of a cat, and his colors some red and yellow ochre obtained of the neighboring Indians, and indigo given

him by his mother. At seven years old his mother was surprised to find that when left awhile with the babe, he had drawn a very good likeness of the infant; and he afterwards often said that his mother's pride in that picture made him an artist. A friend in Philadelphia sent him a box of water colors; and in his ninth year he executed a painting which he always insisted contained as fine touches as he ever executed. He soon went to Philadelphia to study the art; and returning home at sixteen the question of the propriety of fellowshiping in a community of Friends an avowed artist was discussed. His subsequent volunteering at eighteen years to go in a force sent to aid the retreat of Braddock's army from the West of his native colony separated him permanently from his early religious connections. After a brief practice in Philadelphia and then in New York, at the age of twenty-two years, through the liberality of some New York merchants, he was permitted to visit Italy. His youth and his origin in the American wilds, together with his marked genius, made him popular with artists, especially with Raphael Mengs; and during his stay of about three years in Italy he was elected a member of the Art Academies of Florence, Bologna, and Parma. Visiting England in 1763, on his way home several commissions from noble families induced him to take his abode in London; where in 1765 he married a young American woman to whom he had formerly been attached and who went out to join him in England. George III. became soon his attached friend and permanent patron. For fifty-five years, until his death in 1820, West practiced his art at London; leaving about four hundred finished works, many of large size, at his death. His themes were at first ancient, then modern, finally Scripture history. His "Agrippina with the ashes of Regulus" early introduced him to George III.; his "Death of Wolfe," in which breaking over the scruples of the schools and even of Reynolds, he pictured English heroes in their national costume, formed an era in British art; and his "Christ Healing the Sick," and especially his "Death on the Pale Horse," executed when he was about seventy-five years old, are truly original conceptions of Sacred Scenes. West's color by the side of the best English colorists, is faulty, being of a monotonous reddish brown hue; but his correct drawing, his chastened and manly design, and his admirable grouping have ranked him as a master. Though English in his predilections, West showed his respect for the opinions of his countrymen by declining the order of knighthood offered to him when in 1792 he succeeded Sir Joshua Reynolds as President of the Royal Academy.

John Singleton Copley, born at Boston, Massachusetts, in 1737, without instruction began his practice as a painter at seventeen years of age; and at twenty-two years he sent to the Royal Academy at London his "Boy and Tame Squirrel," whose coloring attracted special notice. In 1774 he visited Italy and studied the styles of Correggio and Titian. Returning by way of England in 1776, the American War led him to send for his family to meet him. Devoting himself to English history, his great work, "The Death of Chatham," in which the portraits of the most eminent of the English lords are introduced, won him esteem with the British public; while it also bespoke attachment to his country in his respect for its great defender. Copley had West's excellence of correct drawing; he fell short of him in design; but excelled him in brilliance of coloring. Born one year earlier than West, he died at London five years earlier in 1815. With these two great leaders closes the history of what may perhaps be called "American Colonial Painting."

Sect. 5. The American Painters of the half century succeeding the era of National Independence.

Immediately after the American War of Independence so numerous were the youth of genius that pressed into the profession of artist that it became manifest a National School must soon be established. These indications appeared alike in the Southern, Middle and Northern States; the spirit of the South being ardent and characterized by refined sensibility, that of the North bold and inventive in its cast, and that of the Middle regions more staid and allied to the past. In history and landscape, as well as in low life and domestic scenes, a style truly original and national was established; the American habits and character making the simple modern costume introduced by West into historic painting in England a necessary passport to popular favor; while the forest scenery of the wild lands of the New Continent, especially in the gorgeous dress of a bright Autumn, opened an entirely new field in Nature for the artist's study.

In the North Stuart, Trumbull, Malbone, Fisher and Newton brought honor to the States of Rhode Island, Connecticut and Massachusetts.

Gilbert Charles Stuart, born at Narragansett, Rhode Island, in 1756, having received early instruction from a Scotch painter named Alexander, visited Edinburgh at the age of eighteen years; but, having returned home shortly after on account of the death of his

patron, he went to London in 1778, during the war, where West became his attached friend and teacher. In 1781 he commenced practice as a portrait painter, when he at once developed such power as to rival the best of English artists. Among his sitters were George III., the Prince of Wales, Sir Joshua Reynolds and others; and not long after on a visit to Paris Louis XVI. sat for him. Returning to America in 1793 he proceeded to Philadelphia and painted that master work the head of Washington, of which he afterwards made several copies; the original belonging now to the Boston Athenæum. Till his death in 1828 he continued his vocation; and the great men of the second as well as of the first generation of the American Republic are preserved in memory by his art. Stuart excelled in seizing the characteristic expression, and in the life-like freshness and glow of his flesh color. The head was always his chief study: the drapery he often left unfinished, or threw it into deep shade to give greater prominence to the strong light on the features.

John Trumbull, son of Governor Jonathan Trumbull, whose familiar designation by Washington as "Brother Jonathan" has originated a soubriquet for the people in whose cause he was a pillar of strength, was born at Lebanon, Connecticut, in 1756. While at Harvard College the paintings of Smibert and Copley at Boston led him to devote himself to art. He had executed two pictures on Classic themes, "The Battle of Cannæ" and "The Judgment of Brutus," when the conflict at Lexington in April 1775 drew him at the age of nineteen years to enter the American army. His skill in drawing led Washington when he reached Boston to employ him to make a plan of the enemy's works; and immediately after he was appointed as one of his aids. He served afterwards under Gates and Arnold. In the spring of 1777 the action of Congress as to the date of his commission led him to resign and return to his art. In May 1780 he sailed for France, went thence to London and became a pupil of West. The execution of André led to his arrest and imprisonment; but by the influence of West with George III. after eight months confinement he was released. Shortly after the war he painted "The Battle of Bunker Hill" and "The Death of Montgomery," which were engraved, the one by a German and the other by a Dane, and distributed in prints over Europe. These subjects chosen by the bold young American not altogether suiting the English taste, he painted "The Sortie at Gibraltar;" whose exhibition gave him a wide reputation as excelling in Battle Scenes. Returning to America in 1789 he spent his life chiefly in his native country, laboriously fol-

lowing his art till his death at New York in 1843 in his eighty-eighth year. After painting numerous portraits of his eminent countrymen, Congress employed him at an expense of $32,000, in 1817, to fill four of the panels in the rotunda of the National Capitol, then newly erected, with historical pictures; which occupied him seven years, and have given him his chief fame. The Trumbull gallery of Yale College now contains fifty-seven pictures of his, including portraits, historical and Scripture themes. The figures in Trumbull's pictures have more merit than the back-grounds; but their chief value is their correctness as portraits of the men with whom as an officer of the American army he had been familiar.

Edward G. Malbone, born at Newport, Rhode Island, in 1777, the eminent miniature painter, died at Savannah, Georgia, 1807; his early death cutting off the promise of his rapidly growing power. When a boy he watched the work of scene painters, until he himself attempted a landscape for stage scenery, whose superior execution marked him as a genius. Devoting himself now to painting he acquired by his own efforts such skill in miniature heads as to commence practice at seventeen years in Providence; whence in 1796 he removed to Boston. Renewing here his early acquaintance with Washington Allston, the two young artists went in 1800 to Charleston, South Carolina, and thence to London. Though kindly received by Benjamin West, and urged to settle in London, Malbone returned the next year to Charleston. Failing health discouraged his purpose to attempt larger works; and he devoted himself to miniature portraits; visiting several cities of the United States. Allston, his admirer, speaks of him as remarkable in his portraits of different persons, for "elevating the character without impairing the likeness."

Among other New England artists of this period Morse, Harding, Fisher and Newton deserve mention. Samuel Finley Breese Morse, afterwards famous as the inventor of the Electric Telegraph, the son of an eminent clergyman, born at Charlestown, Massachusetts, A. D. 1791, after graduating in 1810 at Yale College, went to London with Newton to study art under West. Giving attention to sculpture as well as to painting, he modelled a dying Hercules which won the gold medal at the Adelphi Exhibition at London in 1813. Returning in 1815 he gave but indirect devotion to art. In 1824 he aided at New York in the organization of an association which grew into the "National Academy of Design," of which in 1826 he became President. In 1829 he revisited Europe to resume the study of art; and after three years spent in the chief cities of the continent he re-

turned to contribute rather to the literature than to the practice of his profession as a Professor in the University of New York. His project as an inventor soon turned his studies into another channel; where the most eminent success attended his efforts. As a specimen of erratic American fortune leading on to art, Chester Harding deserves mention. Born in Conway, Massachusetts, in 1792, exiled westward when eight years old by the poverty of his parents, then farther still at fourteen, he was a self-taught artist. Emerging by his inventive skill from obscurity though struggling for years to sustain a helpless family, drawn from place to place by necessity, he made himself an artist of such ability that the leading men of the nation sat willingly while he took their portraits. Alvan Fisher, born in Needham, Massachusetts, 1792, at eighteen years devoted himself to painting, and gained note in portrait and familiar domestic and rural scenes; succeeding well in animal sketches. Gilbert Stuart Newton, nephew of the artist after whom he was named, was born 1795 at Halifax, Nova Scotia. His parents removed to Boston when he was eight years old, and he early studied art under his uncle. At the age of twenty-one he went to Italy, and thence the next year to England, where a strong friendship was formed between him and Washington Irving. He early adopted the operatic style, much like that of Watteau; which soon became chastened and subdued. His themes were chiefly studies from Shakspeare, Goldsmith and other classic English authors; his "Cordelia" in King Lear, "Olivia" from the Vicar of Wakefield, and "Abelard in his study" being his master-pieces. After visiting Boston and marrying, he returned to England; where shortly after, in 1833, he manifested signs of mental derangement and died in the Insane Asylum at Chelsea at the age of forty years. An unpleasantness of temper made him generally misunderstood; but the strong friendship of Irving, and of Leslie his brother artist, attested his personal worth; while of his ability as an artist Irving says, that he exhibited "a coloring almost unrivalled, added to a liveliness of fancy a quickness of conception and a facility and grace of execution that spread a magic charm over his productions."

In the Middle States the Peale family led the van in the progress of art in the age after the Revolution. Charles Wilson Peale, born in Chester, Maryland, in 1741, devoted in early life to various mechanic arts, having received some instruction from Hesselius, a German painter in Philadelphia, afterwards from Copley in Boston, went in 1770 to England. Returning prior to the war he for some years painted portraits first at Annapolis, Maryland, then in Philadel-

phia; having such a reputation that he had applicants from Canada and the West Indies. During the war he was a captain in the army; and afterwards painted several portraits of eminent military and civil leaders, which he made the nucleus of a Gallery of Art. Peale contributed indirectly also to the advancement of art by the establishment of his Museum and by his efforts for the founding of the Pennsylvania Academy of the Fine Arts. He died in 1827. Rembrandt Peale, son of the former, born 1778, at eight years was skilled in drawing, and at eighteen years was engaged in portrait painting at Charleston, South Carolina. In 1801 he went to London and studied under West till 1804, when he went to Paris and executed several portraits of eminent men for his father's gallery. In 1809 he returned and settled in Philadelphia. Two large paintings, one classic the other allegoric, "The Roman Daughter" and the "Court of Death," had a large reputation; but portrait was his chief field. Other members of the Peale family, as Sarah and Ann, cousins of Rembrandt, painted portraits with success.

New York has proved a prolific nursery of art talent. John Vanderlyn, born at Kingston, New York, 1776, at sixteen years, began study under Stuart, and in 1796 under the patronage of Aaron Burr went to Paris. He returned in 1801, but went back in 1803 and remained till 1815. During this latter period he executed his American historical scene "The Murder of Jane McCrea by the Indians," his mythological master-piece "Ariadne," and his classic theme "Marius among the Ruins of Carthage," which won the gold medal at the Paris exhibition in 1808, and an encomium from Napoleon. After 1815 Vanderlyn took up his residence in New York, where he engaged in an enterprise for pictorial exhibitions which proved unsuccessful. His later years were chiefly devoted to portrait painting. His "Landing of Columbus" in one of the panels of the United States Capitol at Washington is one of his ablest works. He died at New York in 1852. Asher Brown Durand, born in Jefferson, New Jersey, in 1796, began his career as an engraver, which he learned first in the shop of his father a jeweler, and afterwards studied for three years under Peter Naverich. His success in engraving Trumbull's Declaration of Independence brought him into public notice. Dissatisfied with being in a profession which made him a mere copyist, he practiced painting in his leisure for about ten years; when in 1835 he abandoned engraving for this higher art. For some years he painted portraits, practicing landscape only as a pastime; then devoted himself wholly to historic themes, ideal

scenes and native landscape which have given him his chief fame. As a designer he excels in idyllic expression of poetic conception, as well as in natural and simple scenes; and his execution is characterized by great truth in color and tone.

Charles Robert Leslie, whose father was a citizen of Philadelphia and friend of Franklin, was born at London in 1794 during a brief residence of his parents in that city. At the age of six years, on their return to Philadelphia, he already displayed a taste for art. At the age of nineteen he visited England and studied under West and Allston. After some attempts in grave historical style, the humorous writers of England and the Continent became his study for favorite themes; and the merry scenes depicted by Shakspeare and Sterne, by Cervantes and Molière, became the subject of his happiest efforts. Among other works his "Anne Page and Slender" and "May Day under Queen Bess," brought out between 1820 and 1825, made him eminently popular in England. In 1833 he became Professor of Drawing in the Military Academy at West Point; but soon resigning the position he returned to England and practiced his art till his death in London in 1859. His early productions were in design characterized by rare humor, his composition was expressive, and his execution elaborate in finish. His "Hand-book for Young Painters" is a contribution to the literature of art. Henry Inman, born in Utica, New York, A. D. 1801, from early childhood manifested a taste for art, which was stimulated by the removal of his parents, when he was eleven years old, to New York. In 1814 he entered the studio of Jarvis, the portrait painter, with whom he remained seven years, accompanying him to New Orleans and aiding him in his work. For several years after his majority he practiced portrait painting in New York, having many eminent men as his sitters. In 1844 infirm health led him to England, where he was as successful as at home; painting the portraits of Macaulay, Chalmers, Wordsworth and others, also in landscape, Wordsworth's favorite haunt, "Rydal Water." Returning in 1845 to New York he commenced a series of historical works ordered by Congress for the United States Capitol. He was engaged upon the first, "Daniel Boone's Kentucky Cabin," when, in 1846, he deceased.

In the Southern States, South Carolina has been the special mother of artists. Washington Allston, one of an eminent family, born at Waccamaw, South Carolina, in 1779, in childhood displayed a love for art, which was called out by a portrait painter named Bembridge. His early bent was shown in his effort to convert fern stalks, by tying

them up with colored yarn, into the forms of men and women and making them hold forth pitcher-shaped flowers of pomegranate. At the age of seven years on account of his delicate constitution he was taken to Rhode Island; and while at school here and at Harvard College Malbone directed his genius, and he spent his leisure in drawing from engravings. At his graduation in 1800 Malbone accompanied him to South Carolina. Allston now gave himself up to his bent, sketching comic and tragic scenes, especially pictures of bandits in wild caves. Going with Malbone to London in 1801, he studied three years under West; went thence in 1804 to Paris, met Vanderlyn, and spent some months in the Louvre galleries; and thence again repaired to Rome, where he made the intimate acquaintance of Coleridge the poet, and Thorwaldsen the sculptor, and remained four years. Visiting America in 1809 he married the sister of the Rev. Dr. Channing then eminent as a preacher at Boston; when returning to London he brought out in succession those early works "The Dead Man Revived," "Peter Released from Prison," "Uriel in the Sun," and "Jacob's Dream," which procured him the wealthiest and most princely patronage in England and stamped his genius as eminent for exalted imagination and boldness in execution. Having lost his wife he returned, in 1818, to Boston, where he resided for twelve years, working at intervals, bringing out his "Prophet Jeremiah," "Saul and the Witch of Endor," and "Miriam Singing in Triumph;" all in keeping with earlier efforts and subdued by his riper experience and personal trial. In 1830 he married a daughter of Chief Justic Dana of Cambridge; and in the retirement of his quiet studio at that seat of refinement spent his last days till his death, in 1843. Here he executed some minor works; but gave his thoughts up to the one great study of his life, conceived in his youth, described to Washington Irving in 1817 and matured for years at Boston, his "Belshazzar's Feast." That he might give his whole time to this he declined even the flattering invitation of the United States Congress to fill one of the panels of the Capitol rotunda with a historic piece. On Saturday night, July 9th, 1843, after a week of constant toil on this work, in pleasant converse with his family and friends he was seized by an affection of the heart and gently fell asleep in death. The unfinished picture, now in the Boston Athenæum, is a grand monument, symbolic of its author's life; glowing with unearthly loftiness of sentiment, the effort at whose utterance exhausted the panting breath that sought to give it form.

After Allston, Sully and Fraser brought credit to the State of

South Carolina. Thomas Sully, a native of England, born A. D. 1783, at the age of nine years was brought by his parents to Charleston, S. C. At fifteen he began the study of painting; at twenty settled in Richmond, Va., as a portrait painter; and six years later, in 1809, removed to Philadelphia. Devoted chiefly to portrait, he occasionally attempted history; his "Washington Crossing the Delaware" being a most spirited design. Eminently popular at home, on a visit to England he was permitted to take a likeness of Queen Victoria. Charles Fraser, a native of Charleston, S. C., born 1782, manifested when a boy a taste for drawing; spending many hours in taking sketches of the environs of his native town. Entering however the profession of the law, though at intervals returning to art, he was able about 1818, at thirty years of age to retire on a competency and availed himself of its exemption to give himself to his favorite pursuit. He has had a high reputation as a man of finished culture and an artist of general ability.

The West meanwhile produced able artists; among others, Thomas Cole, born in England in 1801, who came with his father to America in 1819 and settled in Steubenville, Ohio. While employed in designing prints in a cloth factory, an acquaintance with a traveling portrait painter named Stein determined him to study painting. With colors and implements of his own manufacture he began to paint landscapes, rural scenes and portraits. At the age of twenty-one, and only after a few months of self-taught practice he began a tour on foot as portrait painter; reached Pittsburg in the Spring of 1823, where he studied with intense care and interest its bold surrounding scenery; and came to Philadelphia in the autumn where he established himself as a landscape painter. Proceeding to New York in the spring of 1825, Trumbull and other artists recognized him as one of nature's great masters. His next four years originated the American School in landscape. He rambled for weeks among the highlands of the Hudson when the forests were robed in their gaudiest and most variegated hues; and the sketches which he made had a simplicity, truth and living expressiveness, added to an inimitable naturalness of color, that captivated every beholder. Commissions flowed in upon him; he extended his tours to Niagara at the West and the White Mountains on the North; and thus brought a widened range of features into his landscape views. Not satisfied with the copying of natural scenery he attempted ideal themes; in the study of which the whole scene, with every touch of the brush, was thought through and sometimes even written out before he put his pencil to

the canvas. His "Garden of Eden" and "Expulsion from Eden" with their contrast in ideal landscape, exhibited in 1828, bespoke the power of the artist; though they failed to please the public as had his home scenes. In June, 1829, Cole visited London and painted there two years; but ignorant of the features of American scenery professed judges characterized his productions as exaggerated. In 1831 he visited Italy, and studied, till it was photographed on his memory, the magic clime of this storied land. Returning to New York in 1832 he was engaged by Luman Reed, a merchant prince, to execute paintings to fill a small private gallery; and several years were spent on the five large pictures styled "The Course of Empire" representing the effect of progressive civilization in changing the face of the landscape. His "Dream of Arcadia" and "Voyage of Life" followed; whose fame is now world-wide in engraved copies. In 1841 he again visited Italy, spending some time in Sicily; and on his return next year brought out a rich succession of views, including one of Etna. His excessive labor probably hastened his death in 1848; his last works having assumed a religious turn, as appears in his "Il Penseroso," his "Cross in the Wilderness" and his unfinished "Cross and the World." In him was embodied most strikingly the qualities which as a class have characterized American artists; love of nature in her forms of homely loveliness; remarkable purity of private life; and at the close of his career, a deep-seated and unostentatious religious sentiment. Each of these, but preëminently the latter, peculiar not only to the artists but to the men of science and statesmen of America, is doubtless the result of that individual responsibility, naturally felt where no second party is expected to interpose either to assume authority or to relieve obligation in determining and performing personal duty to the Divine Creator.

Sect. 6. The characteristics of American Nationality and Christianity, as developing a comprehensive type and elevated style of Native Art in Painting.

Made up as the early colonists of America were of the more enterprising classes emigrating from several countries of Western Europe, it was natural that they should take, as did the Carthaginian colonists from Phœnicia and the Asiatic colonists from different sections of Greece, a peculiarly comprehensive type and elevated style of nationality. The first immigrants from Spain, France, Germany, Holland and Great Britain were the more energetic, if not the more intelligent and pious, of the middle or civilizing, and of the noble or

ruling classes in European Society. The descendants of all of these original stocks, and fresh emigrants from each of these countries, meeting in the formation of a new Society, have naturally assumed an independence yet courteousness of bearing which in the truly cultured American has ripened into a courtly if not princely carriage, remarked at home and abroad; something like that of the Grecian adventurers and of the Venetian merchants. Their chosen civil government, in keeping with this character and growing out of the varied elements from which it has sprung, has taken the form of an elective representative Republic. Their Christianity, renouncing all claim to State patronage, and deeming it unworthy to build itself on any other authority than its conformity to the teachings and manifested spirit of its divine author, has so compelled individual investigation and awakened personal responsibility that its theoretic faith, its ritual and its ceremonial service have taken the cast of varied individual conviction, while its acts of consecration and deeds of devotion have glowed with the fervor of a personal hope and love. It could not be that these native characteristics should not show a marked development in the advance of American art.

The artists of America, in the present as in the past generations, are of every nationality; among which German and Italian have next to those of native-birth been most numerous. In political views the German has been extreme in his theory of individual independence, fully keeping alive the hereditary spirit of his nationality; while the English tendency may have been to the opposite extreme. In religion the German has cast off all the restraints of ancestral faith, forgetting that individual minds must trust in every department of knowledge to the experience of the past, and not altogether to the slowly-reached deductions of personal reason; while the Italian has rested too entirely in a faith that is so purely hereditary as to be ignorant of its own foundation. In the mass of intelligent American scholars and artists, however, there has been a decided and strong tendency to comprehensive views, and a conservative course in both politics and religion; the reflex of which spirit is taking form in their works of art.

In mentioning different branches of the art of painting in which American genius is developing itself, it would be invidious to regard the few artists named as any other than examples of classes; a Text-Book requiring some names as illustrations, but forbidding the mention of the many reserved for future and complete enumeration. As copies from old masters, an important field of art both as a study

and a reproduction, Paul Balzé's "School of Athens" and some of J K. Fisher's later Venetian masters, have long been admired. In portrait every leading city has its one or more favorite artists; some of whom are destined to shine in this and other departments. Historic portraiture, in the field of aboriginal Indian subjects, has found in Stanley an enthusiastic devotee. History proper is worthily represented by Walker in his Battle of Chapultepec, and by Weir in his "Embarkation of the Pilgrims." In genre, or the lower order of sentiment presented in home life, Huntington, a pupil of Morse, has won praise. In the higher order of passion, Rothermel is showing decided genius; his "Paul before Agrippa" exhibiting a creditable departure from the ideal of Raphael in his Cartoon of "Paul at Athens," in which the apostle is tall and commanding in person, while Rothermel's conception is according to the historic tradition of the Roman Lucian, as to "the bald-headed Galilean with a hooked nose," and of Nicephorus and others, who described him as small of stature, with aquiline nose, high forehead and sparkling eyes; while his "Christian Martyrs in the Coliseum" is a master-work in architectural back-ground, in the grouping of the action of the picture, in the expression of the chief figures, and in the shade and aerial effects thrown over the whole. Fresco has just reached a worthy American character in the works of Brumidi in the Roman Cathedral at Philadelphia, and in the United States Capitol at Washington City.

It is, however, in the field of extended landscape, and especially in distant aerial effects, that American artists have won the meed of leadership in a distinct School. While Leutze has recast admirably Italian and especially Venetian sky, a class of artists have caught the mantle of Cole in American scenery. The twilight landscapes of Weber are fairy-like in the management of aerial and ground tints; the sky of Church's "Cotapaxi," "Heart of the Andes" and "Niagara" is as rare in art as the subjects of his sketches are in nature; and Bierstadt's master-works, uniting both these fields, have established a new school in the history of coloring.

The lack of the religious element in the designs of American artists is calling forth frequent comment. Allston, drawn by his early affliction to religious studies, and sacrificing public patronage and popular fame, always called out by historic master-pieces, that he might give himself to one great sacred theme, is an exception in American art. The devotion, however, of West and Cole in their advanced and declining days to these themes, in the light of the

fact that such minds as Newton and Grotius and great numbers of the ablest French, English and American statesmen and scholars have given their ripest powers and yielded their deepest convictions first to the investigation then to the unfolding of Christian truth, indicates that when American genius is directed to this field it will show a depth of conviction, an intelligence of faith, an inspiration of hope, and a zeal of love entirely new in the history of Christian art. As American scholars, aside from the prejudice of national ecclesiastical predilections, have analyzed Christian traditions, local and historical, with an independence and candor of judgment impossible in men of old European national prejudices, so, with their superior skill in natural landscape and their personal intelligence in Christian truth, the climactic field of art, the union of a lofty ideal of the Divine "Word made flesh," with the perfect transcript of the scenes of his actual life, may be realized by American painters.

BOOK VI.

LANDSCAPE GARDENING; THE GROUPING OF NATURAL OBJECTS TO SECURE ARTISTIC EFFECTS OF FORM, COLOR, RELATION, AND MOTION.

The double designation "Landscape Gardening," suggests two *ends* as proposed by this Art. A *garden* is designed primarily to subserve an end of utility; furnishing provision for the table. A *landscape* on the other hand cannot be thought of otherwise than as an assemblage of objects producing the impression of beauty. This same designation also suggests the two classes of *means* by which the ends of the art are attained. The *landscape* is an artistic work conceived and finished by the Creator's hand; a *garden* is a work whose order and ornament are designed and executed by human hands. A *landscape garden* is a composite creation; in which the artist availing himself carefully of the grand outline already furnished by the Divine skill only adds the touches necessary to remove the blemishes which Nature's derangement has introduced, and to adapt for human dwelling-places what had been made beautiful when only the abode of a lower order of beings. As Lord Kames has said, "Gardening is not an inventive art, but an imitation of nature, or rather nature itself adorned." In two respects therefore Landscape Gardening is a comprehensive art.

Landscape gardening is comprehensive in the address it makes to man's nature as a being designed for happiness. It appeals primarily to the eye; uniting the four impressions by which this organ has power to please the mind, the beauties of form, of color, of relation, and of motion. At the same time it appeals to the mind indirectly through the other senses; adding the odor of flowers, the flavor of fruits, the refreshing of shade, and the charm of the insects' hum and the birds' warble to all the delights of the eye. Yet again it is an art open in its treasures to all. The poor man's garden is the select spot separate from his fields, whose vegetable products are the luxuries of his table; the trimming of whose borders is the recrea-

tion of his brief moments of leisure; and whose few fruit trees and narrow flower bed are the delight of his children. The rich man's broad estate, converted by the hand of art into one far-stretching landscape, all blooming as a garden, may be to him a pride though it is a care; but it is in reality his grand contribution, willingly or unwillingly provided, to feed the eye and culture of a whole community living around; whose privilege it is to enjoy and improve upon its delights equally with the possessor, while exempt also from his care.

Landscape Gardening is as to time a comprehensive art; being the earliest and most universally appreciated. The abode of man in his purity and perfection of nature was a garden; whose delight spoke to the eye before sculpture and architecture could have existed; while too poets are eloquent on the charms of landscape enjoyed by the savage before other arts are known to him. As the garden is the first so it is the last of human delights; all men picturing the happy abodes of the future life as gardens of delight; the Greek in the gardens of the Hesperides, the Roman in the Elysian fields, Muhammed in the luxuries of the Turkish garden, and Jesus himself in the Persian Paradise.

Not only the passive delight of enjoyment in the garden as a work of art already prepared, but the purest active employ of perfect man, it is intimated in the sacred record, was the study of new forms of adornment for the landscape garden already so matchless. The delightful toil of the sinless pair in Eden was to "dress and keep" the garden. This exalted employ in man's primitive estate may be traced in the Asiatic and the European family alike from the earliest to the latest times. In all cultured ages and nations it has been the art earliest practiced because of its utility, yet last perfected as a work of beauty; according to Lord Bacon's philosophic statement, "Man came to build stately sooner than garden finely; as if gardening were the greater perfection."

CHAPTER I.

THE EFFECTS TO BE SOUGHT IN LANDSCAPE GARDENING.

Landscape Gardening, broad in its sensual appeals, is restricted in its spiritual addresses. All the varied impressions of the mind

made through the eye, the beautiful, the grand, the picturesque, the novel, the grotesque, the tragic and the comic belong to this art. Moreover in Landscape Gardening other organs than the eye are made the medium of appeal; the garden being designed to delight by its fragrant odors, its luscious flavors, its refreshing coolness, and its grateful murmurs and warbles; while even the exhilaration of muscular action is sought in the gymnastic provisions of the pleasure garden, and in the hunting park. The range of moral impressions sought, however, in this wider range of addresses to man's nature is restricted in Landscape Gardening. Its delights are more adapted to the physical nature than those of the other arts; and, while its higher and intellectual appeals are here associated with the lower, their range is limited and their address is but indirect. Thus none of the emotions awakened by human associations are called forth by Landscape Gardening; and none of the higher social and religious affections are but indirectly subject to its culture.

Sect. 1. The general end of Order and Symmetry, coinciding with Utility, in Landscape Gardening.

The main end of gardening as ordinarily practiced is utility. Yet even in a market garden regularity of arrangement not only tends to profit by promoting convenience of culture, but well-disposed beds and well-kept paths, attractive to the eye, win a patronage which slovenly neglect of order and beauty could not secure. So far from being inconsistent with utility, beauty of form is an element conspiring to promote profit.

The first step in the effort to give beauty to a garden is, as Kames and other critics agree, to seek simple order in the arrangement and symmetry in the proportion of parts. This even in a vegetable garden, where not a flower or ornamental shrub is introduced, may be sought as a charm. Order, for instance, demands that in the laying out of the paths there be a central division which will allow an equal number of subdivisions on either hand; and it also requires that in the selection of plants to occupy the different ranges of beds those of less stature be placed along the central avenue, and that a gradation of height be secured as the different products are seen from the central point of view. Symmetry again, demands that in the simple rectangular bed there be a fixed measure controlling the length and breadth, so that each shall have the same or multiple proportions. In the simplest gardening the elements of form, order and symmetry claim attention; and the rudest husbandman regards their demands.

In the broader and truly artistic work of the landscape gardener, in the laying out of a public garden, park or cemetery, or the grounds of a princely mansion, the primary principles of beauty in form must be first regarded. The winding avenues, intersecting each other, must be so arranged as not to mar each other's pleasing outline; the clumps and lines of trees of different sizes, forms and shades must so succeed as not to destroy each other's effect. Thus the vegetable garden should be behind, not in front of the flower borders; and the stable should be hid by the mansion rather than obstruct its view. In proportioning the locations and sizes of orchards, ploughed fields and pasture-grounds, as well as of groves and lines of trees, the eye of true taste is demanded as much as in any other of the fine arts.

To these principles of order and symmetry the ancient Greeks and Romans, from the general style of their art, gave an excess of attention. The little court-yard back of the entrance in a Roman city-residence was as mathematically exact in all its measurements as a diagram in Euclid. This controlling method entered into larger works, in their villa pleasure grounds; it passed down from them to the middle ages; and without even the virtue of the principle originally controlling its features it was introduced into France and England. Its Procrustean law worked sad havoc for a time amid the wooded knolls of the British Isles; until other principles, equally worthy of the artist's regard began to assert a correspondent sway. That the simple laws of order and symmetry could, among such a people as the Greeks, originate a style of garden arrangement, and that they should have been the ruling principle of that art for so many ages, is sufficient testimony that order and symmetry are permanent elements, never to be overlooked in this art.

SECT. 2. THE GENERAL AIM OF GRANDEUR IN EXTENT AND PICTURESQUENESS IN GROUPING, CONSPIRING WITH ELEGANCE IN FORMS AND RICHNESS IN COLOR.

The English mind had been called by Kent and others to this second aim in Landscape Gardening when Lord Kames wrote: "Gardening besides the emotions of beauty from regularity, order, proportion, color and utility can raise emotions of grandeur, of sweetness, of gayety, of melancholy, of wildness and even of surprise and wonder." Grandeur, as we have seen, is beauty with massiveness or wide extent; an object being grand which having the attributes which make up beauty in a smaller object is too vast to be taken in at a

single glance of the eye. Architecture under the inspiration of a M. Angelo, and even sculpture in the hands of a Phidias, can aspire to attain this end. It belongs, however, to the great Architect of nature to minister in the highest degree to the emotions of grandeur and sublimity. Landscape gardening can take advantage not only of his methods, but also of his material, to accomplish a kindred end. Bringing in an extended range of wood and of open field, of hill and of dale, the landscape gardener is master of grandeur in the effects he seeks.

The English Landscape Gardeners have been led naturally by the surface of their uneven Isle and the darkness of its foliage, to aim in their art at the "Picturesque;" a word of which they are the coiners, though its termination is French in form. Sir Richard Morris in his brief treatise of the art distinguishes the picturesque as seen "in unfinished" as opposed to "finished" forms. As we have observed Landscape Painting and Landscape Gardening have had a natural connection in the history of art; being specially wedded in English practice. As in a landscape view of an extended prospect some parts deeply shaded, and others dim in the distance must be "unfinished" in order to be true to nature, an idea for which Ruskin has so contended, so in a landscape garden a rock that would be a blemish if the wild brush around it were removed, may be made greatly to add to the entire effect if left in its native ruggedness. As Phidias had learned that the very roughness of Minerva's brow would conspire to give polish to that very feature when seen in the distance, so the very want of finish skilfully introduced by the gardener in a vista view will give a grace which no pruning could effect. To this principle Lord Kames refers; suggesting that though "Nature in organized bodies, comprehended under one view, studies regularity," yet she "in her large works neglects these properties;" and hence in "embellishing a field. . . . the artist ought to neglect them."

The main point of attention in seeking to secure the effect called the "picturesque" is the appropriate grouping of the finished and unfinished portions of the landscape; the skilful juxtaposition of similar or contrasted objects, of a tangled copse and a shorn lawn, of an ivy-covered ruined wall and a cleared grove, or of a wild cascade and a neatly-walled lake. In this grouping of finished and unfinished parts, however, the impression of rusticity as characterizing the whole is not consistent with the idea of true art. The unfinished parts are not to be allowed to degenerate into the aspect of slovenly neglect; but an air of elegance, though it be of elegant

neglect, is to be given to every part; otherwise the near approach which betrays a slovenly aspect will mar the general impression.

As in form the general aspect should be one of elegance so in the colors grouped and blended the general impression should be one of richness. Here again, the colors of foliage and flowers, of buildings and fences, of architectural and sculptural ornaments should be in themselves tasteful; lest the familiar distastefulness of a near view be retained in the distant and modified prospect. To this attribute, colors everywhere rich thrown together with apparent negligence, yet carefully adjusted by an art so simple that it was only a relieving of interferences in untrained nature, Milton alludes in picturing, first the garden as it came from the Creator's hand, and then Eve's modest employ amid its extended fields. Over it were spread,—

> "Flowers worthy of Paradise, which not nice Art
> In beds and curious knots, but Nature boon
> Pour'd forth profuse on hill and dale and plain,
> Both where the morning sun first warmly smote
> The open field, and where the unpierced shade
> Imbrown'd the noontide bowers;"

amid which Eve at her pleasing toil is pictured as

> "Oft stooping to support
> Each flower of slender stalk, whose head, though gay
> Carnation, purple, azure or speck'd with gold,
> Hung drooping unsustained."

In art the poet is the true philosopher; imagination suggesting, as to Newton under the apple-tree, the highest principles of truth.

Sect. 3. The special effects of Association; as the novel or venerable, the native or foreign, the enlivening or depressing.

The power of association, one of the chief charms in foreign travel, may be secured in landscape gardening more fully than in any other of the arts. The main impressions to be sought in this connection are to be secured by a judicious introduction of the novel and the venerable, of the native and the foreign.

The novel may be presented in that which is in itself a new object of human invention, or which in location is new, being a transplant from other lands or climes. To a certain extent the simple variety which may be secured in a garden gratifies the taste for novelty. A work of sculpture or architecture has one stereotyped unchanging

form, color and relation. In the garden, however, new forms and hues appear every day; every shower giving a fuller and rounder development of shape and size, and retouching with the pencil of the great artist each freshened tint; while even the frosts of autumn have a strange power to paint with sober, yet gorgeous hues the vast amphitheatre of hill and valley. Every change of position, too, in walks for hours, throws the groupings of trees into new combinations. In addition, however, to this constant renewing of the face of the landscape by the action of the elements and by the beholder's change of position, novelty may be sought by new collections or constructions. Among the wild flowers and shrubs of every neighborhood there are rare plants which may be culled and transplanted; in the architectural and sculptural decorations; introduced, as in summer houses, fountains, gates and fences, novel designs may be invented; and in the birds and animals collected rare varieties may be sought. Thus Solomon had apes and peacocks brought from Southern India, as well as exotic plants, in his gardens at Jerusalem. The Chinese have always been noted for their delight in surprises introduced into their gardens; a winding path through a thicket suddenly ending at an impassable barrier, or opening into a delightful parterre. The gardens of Versailles have an excess of novelties in quaint devices for hedges and fountains.

While the love of the novel leads to new devices, attachment to the ancient prompts to resorts which may recall associations of the venerable past. An artificial wall in apparent dilapidation, a broken column, a fragment of an ancient statue, or even an old dead tree covered with creeping ivy, add the charm of connection with days bygone. The fondness for the antique led the Romans under Augustus, and again under Constantine, to bear off from Egypt nearly all the obelisks found in the land, and to set them up as venerable monuments in the ornamental squares of their younger cities Rome and Constantinople; while the same aspiration led the Emperors intervening between Augustus and Constantine to store their new villas about Rome and Naples with the relics of ancient Grecian Art; to which Cicero, Horace and other Latin authors so often refer. The Chinese, with a taste unrefined, yet showing the more its naturalness in its extreme development, introduce dry trunks of trees artificially transplanted, whose naked limbs tell of years of greenness long past. Lord Kames, in his peculiarly clear analysis of the power of association awakened by the venerable in garden scenery, even suggests attention to the age and style; whether Grecian or Gothic is appropriate

for architectural ruins. He suggests that the Gothic is most appropriate; because "the Gothic exhibits the triumph of time over strength; a melancholy but not unpleasant thought;" while "a Grecian ruin suggests rather the triumph of barbarity over taste; a gloomy and discouraging thought."

Associated with the ideas first traced, at least as a means to an end, is the introduction of the foreign among the native in the selection of plants, animals and of architectural decorations of different lands. Every house-keeper, fond of plants, wishes her flower-border in summer, and her bay window in winter, to have in it some rare plant; and the simple fact that it is foreign, adds to the interest attaching to a plant. The canary and the parrot are in themselves interesting; but their foreign character adds to their charm. In the large collections of a public garden the green-house and conservatory of exotics, with trees from every clime, is, as in the "Jardin des Plantes" at Paris, the chief portion of the garden on which expense is lavished. So, too, the menageries of foreign animals may grow to the extent of the London Zoological Gardens. Some bold designer has suggested for the environs of the American Capital an enclosure of some miles in area in which sections be planted, stocked and peopled by the trees, animals and men of the three continents of the old world. As the venerable mingled with the novel gives comprehensiveness in time, mingling the past and old with the present and new, so the foreign mingled with the native gives the range of space added to that of time; making the ends of the earth seem to meet in their gatherings.

Not only the associations of time and space, but also sentiments enlivening or depressing may be awakened by a studded landscape; aiding sculpture to arouse religious reverence or sorrow for the dead. A garden decked with gay flowers and cheerful shrubbery, sparkling with glittering waters and enlivened by sportive animals and gay songsters, may give the exhilaration of new life. With equal power the cool and quiet grove may woo, as did the groves of Academus, to poetic and philosophic reflection; or, like the venerable olives in the garden to which Jesus oft resorted with his disciples, they may dispose the soul to communion with the Divine Spirit in prayer. With yet greater effect the church-yard may, with its moss-covered stone and bramble-carpeted grave, make death seem gloomy and the tomb dreary; or, with its opposite trimming of gay flowers and lively sculpture, it may give the associations of holiday cheerfulness to the last resting place decked as a bridal

bed; or, yet again, the drooping willow and the dark green leaf and modest blue flower of the thick clustering myrtle may yield that yet more just and equable impression of light mingled with shade which seem fit at the tomb.

SECT. 4. THE SPECIAL EFFECTS OF MOTION APPARENT OR REAL; IN UNDULATION OF SOIL, IN RUNNING WATER, IN WAVING FORMS AND SUSCEPTIBILITIES OF TREES, AND IN ANIMATE CREATURES.

While form and color speak to the mind in the landscape, producing their differing impressions, there is a special power in motion; which indicates life. In sculpture and painting the action which the Greek artist always infused into his works was the leading element of their power. In those arts of course, motion or action is but represented; it is apparent not real. In gardening, however, actual motion, that of physical agencies and of animal as well as vegetable life, is a positive element in a pleasing landscape. There is scarcely a feature of the landscape which may not be made instinct with motion as a power to please the mind.

Even the bare land itself, as the word "undulating" and "rolling" so commonly employed imply, may give the impression of motion. It is not unworthy of note that increase of extent is apparently produced by undulations of surface; for though the surveyor is right in reducing his measurement of land to a plane surface, since no more uprights can be reared upon a slope which is the hypothenuse of a right angled triangle than could be erected upon its base, and hence no more available products can be raised upon a hill-side than on a plane of a less area, yet to the eye that roves along its surface, and to the feet that climb and then descend its rise, there is a more extended area. In addition to this apparent increase of superficial feet in the area the eye that turns upward and downward over curved hillocks comes to transfer, as it were, its own movement to the surface over which it glides. The whole frame, too, of the rambler up and down its inclinations takes on the motion peculiar to one riding over billows at sea; and the landscape becomes to him literally undulating and rolling. The influence of this feature is to be traced in the contrasts of Egyptian and Assyrian as compared with Syrian and Persian, and of Dutch as compared with English gardens.

In water there is real, not apparent motion. Be it the gentle ripple from the breeze on the quiet lake, or the gliding slide, the rolling furrow or the whirling eddy of the running stream, be it the thin white sheet with the glassy vase-like curve of the waterfall, or

the parabolic shoot of the upward jet and the raindrop fall of the fountain, motion in water is most pleasing either in the heights or in the low grounds of a landscape. Hence alike in primitive Eden out of which flowed the streams forming the head waters of four rivers, and in the most tastefully wrought public gardens now found on every continent of the globe, living and flowing water seems to be an indispensable requisite. Its interest is heightened when as in the palace gardens of Europe fish and other aquatic tenants are added; while even the encircling shells around the basons in the little court-yards of the old Roman houses at Pompeii have a peculiar charm.

The motion of the green plants spread over the surface of the landscape has also its charm. Poesy has grown eloquent over the beauty of the golden grain rocking its myriad heads responsive to the Zephyr's mild sweep. In trees every variety of form susceptible to motion is furnished. The aspen's leaf quivers on its narrow and unstably balanced stem in the calm as in the gale; while the stiff spines of the pine tree scarce waver amid the fury of the tempest. The branching top of the maple sways on its fragile foot as the gale rocks it; while from the tall stout elm and the low drooping willow only the tips of their slender boughs fly like streamers out on the wind. The sturdy oak bends with young elasticity to let the gale sweep over it; while the stiff cedar nods no recognition even to the king of storms, when passing by in his majesty.

The final delight of a broad landscape garden is its animate inhabitants; which for a double reason give a pleasing attraction. A landscape is made for the lower animals, its grass for the sheep and cows, its forest nuts for the squirrel and its flower seeds and its fruits for the birds; and the green sward and the forest and fruit trees look desolate without their appropriate tenants. Yet more in themselves these denizens of the landscape are interesting. Eden would have had but half its delight had not the animals been man's companions and his charge; Solomon sought strange creatures like the ape and peacock to add a charm to the gardens of his favorite bride; and always the swan on the lake, the bear chained to a rock, and the eagle securely caged are central attractions of the most elaborately attractive public pleasure grounds.

Sect. 5. The rare resort to fictitious effects; as the imitative, the deceptive, the grotesque.

Hogarth dwells on Intricacy as one of the chief elements of success in art. Milton's scholarly culture, and his enriched imagination

pictured as one of the fascinating attractions "the crisped brooks," which "ran" through Eden

"With mazy error under pendant shades."

The Chinese strive to crowd their more extended and elaborate gardens with surprises; some of them most uncouth in their conceptions. The same impulse of the mind which makes children fond of riddles and puzzles, which stimulates the hunter and the explorer in tracking forests, deserts and mountain passes, and which gives fascination to the involved plot of the writer of romance and of tragedy, may have its place among the fine arts addressing the eye; and gardening seems to be the chief art for its exercise.

The imitation of natural objects not furnished by nature in a landscape is legitimate and pleasing when that imitation is produced by material of the same class to which it belongs. A tall jutting rock may be well represented by a pile of loose stones so covered with moss and ivy as to hide its disintegration. A grotto may be built of brick and broken stone into a hill-side where there is no rock to excavate; though reared above the level ground it would be unnatural. Trees and vines may be bent and interwoven into arbors and festoons; but as Lord Kames well remarks, the clipping of clumps of shrubbery, as at Versailles, into clumsy imitations of animal forms is a violation of taste. A fountain jet may be made to spout from the mouth of a fish, or a swan; though Lord Kames condemns this conceit: but it would be more in accordance with nature to make the jet issue from a whale's snout or an elephant's trunk, or from some known artificial spout as from the nose of a pitcher or the cock of an urn. In all efforts at imitation true taste seems to require that effects represented seem to proceed from a natural, not an unnatural cause.

In the employ of deceptive effects a similar principle, without doubt, should serve as a guide. As in architectural interiors multiplying mirrors may be allowable to give the aspect of reduplicated halls, so a skilfully adjusted perspective, seen through an opening among trees, may be made to duplicate the extent of the natural grounds of a garden. As frescoed walls giving the impression of openness and extent of view may give an airy relief to walls that would otherwise seem close and cramped, so the enclosing limits of a garden, instead of being high walls of brick which make the beholder feel as if cooped in the enclosure of a prison-yard, may be a low green hedge or an open paling of wood, or an arborescent rail-

ing of bronzed iron, or a vine-covered wall of brick or stone which gives the impression not of a limit but only of a dividing line. Bronze lions or dogs chained at a gate, or even stuffed deer or birds half hidden among the foliage, are legitimate deceptions; though foliage cut into animal forms is illegitimate since it is less even of a deception than of an imitation. Skilfully painted implements, such as of a key hanging by the side of a gate that is locked, or even of a vase of flowers or a basket of fruit, when so arranged as really to produce deception are common; and if their borders are skilfully concealed by foliage are quite successful.

The garden is the legitimate field for the grotesque, even more truly than for the imitative and deceptive; and it is indeed the only one of the arts to which it is truly appropriate. The natural location of the grotto is the shaded hill-side; and no landscape garden can be complete without wooded hillocks. Hence Milton introduces into the first garden of man, "umbrageous grots and caves;" while in almost every age and clime, if nature has not furnished a hill-side for such a retreat, an artificial mound to serve as a grotto cover will be reared. The grotto is the only natural as it is the originating location of the grotesque. No principle of taste can justify the mediæval artist who covered the sunny fronts of the Old Cathedrals of France and Germany with all sorts of fantastic and hideous figures of reptile forms; and even their later and more general employ as water spouts upon cornices is objectionable. The reptile seeks the dark shade of the grotto, or of his burrow; and if he does occasionally obtrude his head from chinks and deep crevices in a dilapidated wall, he does not stand the sun's glare. The oak carving appropriate to a dark old lizard haunted castle or baronial hall may be artistic in a dark lobby of dreary aspect; though not for a light and airy saloon. The garden grotto, however, is of all other spots the natural home of the grotesque. The Chinese probably carry this feature to an extreme, while perhaps modern Western taste may not sufficiently appreciate the grotesque.

Sect. 6. Studies in Science and Art relating to Landscape Gardening, and requisite to the master in this Art.

In Gardening, as in the other fine arts, the theorist may not be a master, and most students in this art will only be amateurs seeking the knowledge of its principles as an element of general culture. For the master in an art the science of his profession is essential to

uniform success; and to the mere student it is the main object of acquisition.

In Geometry, as a branch of mathematical science, the landscape gardener must be a special proficient. Deriving its very name from the measurement of land, the Egyptian farmer needed its principles in order yearly to restore the field bounds which the Nile's inundation every summer swept away; but the landscape plotter has a far more difficult task. The carpenter with his square may cut with accuracy rectilinear figures; but it requires the skilful carver to strike a circle or ellipse. Some of the most difficult applications of geometry are found in the plotting of the beds and paths of a flower garden or court-yard. The principles of Descriptive Geometry and Optics, also, as they relate to Perspective are essential for the study of effects of landscape in the distance; these principles having an application in this respect kindred to that required in the other arts.

As Chemistry reveals to the painter the pigments which will be durable as well as rich in hue under all the accidents of age and damp, and to the architect the kinds of wood, stone or metal that will stand the pressure and the wear of the elements, so to the gardener Agricultural Chemistry alone can be a sure guide in securing a healthful and rich growth to the plants which are the chief material of his art. Essential as this is to the mere horticulturist, who seeks profit rather than pleasure, it is indispensable to the producer of every variety of flower and ornamented shrub. With this study that of Botany and Vegetable Physiology must be associated; a science less required in useful than in ornamental gardening. To this pursuit, as an art worthy alike of a princely mind and a princely purse, the wisest of ancient writers gave a share of his time and thought; and the sweetest of poets have mingled in this flowery field fancies for the imagination and precepts for the practical reader. Of Solomon, the king of Israel, declared to be "wiser than all men," we are told that "he spake of trees, from the cedar that is in Lebanon even unto the hyssop that springeth out of the wall;" the giant of the forest, and the humblest lichen on the garden-wall, being the extremes of landscape ornaments which passed under his review. The sweetest of Roman poets, the graceful and pensive Virgil, has in his Georgics and Bucolics, shown the dignity as well as the extent of the science of plant-study and culture which the master in gardening must follow the poet in attaining.

Not only in science but in art also the successful gardener must be

an adept. To accomplish the effects sought in color and form, relation and motion he must be skilled in the principles of design, in the analysis and æsthetic power of hues and tints, and in the combination of his varied material so that the whole of his work shall like a group of sculpture or a composition in painting conspire to one idea. The simple fact that landscape painting, the latest if not the ablest branch of that art to be developed, has always been associated in its progress with the improvement of an age or location in landscape gardening, is sufficient indication how comprehensive a study of art as well as of science is essential to the highest success in landscape gardening.

CHAPTER II.

THE MATERIALS BY WHICH THE EFFECTS OF LANDSCAPE GARDENING ARE SECURED.

The material available for the sculptor and architect, as well as the end for whose accomplishment it is furnished, must be a study with a master; for the sure production of a desired effect must be dependent in a measure on the adaptation of material employed. As the material whether of wood, stone or metal available to artists in these departments varies in different lands and climes the study of its capabilities by the master must be an independent investigation; only general principles derived from the experience of other artists aiding his inquiries. If this be true in arts which employ so limited an amount of material it must in a far wider scope be true of gardening. The marble of Lebanon, of Pentelicus and of Carrara have their palpable differences; as has the granite of Egypt, of Spain and of New England; but this variety is soon exhausted by the studious analyzer. It is a more extended and a different inquiry which is presented to the landscape gardener; the range of whose art takes in every variety of inorganic material as earth, stone and wood, and every class of organic creation as herb, shrub and tree, bird, reptile and quadruped.

Sect. 1. The two Classes of Objects, natural and artificial, combined in Landscape Gardening.

In sculpture and architecture the entire work to be performed by

the artist is human. The Divine hand provides material for the artist's work; and, moreover, presents in nature models for imitation. Every part of the form, however, and in painting the entire color is to be wrought out by the artist's skill. In gardening, on the contrary, part of the forms, with their colors, are furnished in nature, and only their grouping belongs to the artist; while as a second work the sculptor and architect are to construct and to group their work in combination with the works of nature.

The soil was made by the Creator for the production of plants. It will be clothed with grass for the food of flocks, with grain, herbs and fruit for man's nourishment, and with shade-trees for his shelter; or it will be covered with weeds or noxious plants. It is man's work to cull and to culture the plants designed for his good, making them spring up and thrive around him. It is his privilege to link pleasure with profit by causing the landscape to bloom and glow with beauty in the plants he rears and in the groupings he gives them. These are natural elements to be wrought by his skill into his work.

The ground with its products was designed to be the abode of man. The house to shelter him and the conveniences he gathers about it, the stable and stalls for the beasts that serve, the fences and the out-houses that add defence, convenience and comfort to his domain, are, though artificial, essential parts of the one whole. Yet more the proper location of these upon the grounds to secure both utility and beauty, the happy combination of the natural with the artificial, makes the whole a composition quite unlike that of any single art.

Sect. 2. The structure of the surface of the ground to be adorned as the controlling natural feature in landscape gardening.

To a certain extent the formation of the ground may be modified by art. Its great leading features, however, of surface, whether a plain of sand or loam, a meadow of dark damp mould, a rolling gravelly succession of hills, or a rocky mountain-side, are fixed unchangeably by nature: they must be accepted as they are, and be made the foundation of the work expended upon their face. The cast of structures to be erected, and the choice of plants to be reared must be made dependent on this structure of surface already fixed by nature as its leading feature.

If choice be allowed, the eye of taste may make extended search for a spot presenting the greatest variety for the accomplishment of its ends. Thus the Romans in the times of the Republic followed up the Anio for miles from their city in order to select such retreats as

Tivoli for their favorite villa residences; and the Emperors did not value days of travel to secure the attractions that clustered about Baiæ and Cumæ and the Bay of Naples.

When selected, either from necessity or choice, the surface of the ground is a feature controlling the natural, and to a certain extent the artificial ornamentation of its face. On a perfectly level surface, carriage and foot-paths and also field bounds, not only allow but to a certain extent demand straight lines as their limit; for though a serpentine avenue is allowable in a level garden, a bowed and especially a serpentine field-bound on a perfectly flat surface could not be made to seem natural. On the other hand there is a habit in animal instinct, which thus becomes a law of nature, to seek a winding path over an eminence. The camel of Arabia in climbing a mountain seeks a winding path; and the dray-horse dragging his load up a broad avenue on a hill-side, bends first to one side then to the other, making a serpentine path for himself to avoid the direct pull against the force of gravity. Guided by this instinct of the animal the explorer, seeking the best track for a road across mountain regions, is surely led to the lowest and most accessible pass as he follows the windings of a water-course and of the deer that resort to it. The cattle in every pasture wind in graceful curves about the hill-sides as they browse along their sides or cross them to more distant fields. The landscape gardener would be at war with nature's models who should insist upon laying out straight avenues on an undulating surface; as the engineer does who cuts a high road in a straight line over an eminence even when it would be a less distance to wind gracefully and without labor around its base.

Indeed not only in paths and field bounds but in the selection of trees for different portions of the grounds good taste will look first at the structure of the surface as a controlling guide. Practical knowledge as much as true taste would make the outline of a lake in a deep valley not an unvarying ellipse but in curves conformed to the foot of the hill-slopes around; it would place a grotto in the steepest side where rock, if not present, is indicated by the precipitous slope; and it would fringe the lake with willows, and sprinkle cedars on the rocky heights. The cedar of Lebanon may be transplanted in modern days to the Garden of Plants at Paris as it was in ancient times to the Syrian gardens of Baalbeck lying between the ranges of its native mountains; and the palm may tower in Hyde Park at London as in the gardens of Shoubra the favourite palace of the Pashas of Egypt. But the cedar must be planted on a bleak rocky

hill-side and the palm in a sunny and sheltered nook; for the demands of beauty as well as of horticultural experience make surface to control other natural features in a Landscape Garden.

Sect. 3. The style of buildings to be erected as the leading artificial feature in Landscape Gardening.

Surface of ground, nature's provision which cannot be materially changed, is as we have seen a controlling guide in ornamentation. On the other hand styles of architecture, which may be indefinitely varied, so they are in general accord with their location, become, when one is selected, leading features hinting a principle of harmony controlling all the artificial adornments. Here two points for consideration are suggested; first, the circumstances which must influence choice in the selection of an architectural style; second, the extent to which the demands of harmony require adherence in different portions of the same grounds to the one style selected.

We have observed in the history of architecture how the circumstances of climate, surface of country and material ready at hand have determined the general style of architecture in different lands; and how the special culture of a nation has given a ruder or more refined character of adornment and elaborateness of finish to the structures of the same type in the progress of a people in civilization. Those leading circumstances will always demand attention in fixing the style of buildings appropriate to ornamented grounds.

The general design of the buildings to be reared on private grounds will of course always be one. A mansion for the family, a porter's lodge and farm-house, the stable for the mansion and the barns and granary for the farm-house, and also summer houses and arbors for shelter in the hot season and green-houses and conservatories for the cold season, are the more important buildings required. The mansion is, of course, the principal structure from which the others should take their type. Regard for surface of ground requires that a Swiss cottage, with its roof of the sharpest pitch, should be nestled under the projecting brow of a hill too steep for easy ascent; that a Chinese square house, with light roof and broad open verandahs, should stand on an open field with a sunny exposure; and that roofs of intervening steepness, as the gently sloped gable of the Grecian temple, the steeper but straight roof of the Italian villa with its limited corridors and balconies, the French chateau with its sharp double-pitched roof and its windows and door with slightly projecting columnar decorations, all these, graduated in a scale between the extremes, re-

ceive a location on a surface varying from the extreme of flatness to that of ruggedness in surface. The climate, it should be remembered, is to a considerable extent assimilated to the surface of country; the Swiss Alpine regions being on the same parallel with the plains of Southern France and of Northern Italy, but of a climate as diverse as their surface. In general the same measure of openness or compactness is to be sought in the style of building that is found in the face of the grounds to be occupied; while it is true that the colder winters of such a country as New England and the denser fogs of Old England require so far as form is concerned, a more compact style of building than is required on a surface of the same character under a more southerly sky. As to material the supply of a country may, as in Egypt and Greece, limit choice. When however wood, brick or stone are at hand, choice may be controlled by the means of the proprietor; while nevertheless the style should be dependent on the kind of material selected. A Grecian edifice should be constructed of material which can be rendered as white as the marble of Pentelicus; while a Gothic structure of fine white marble can never be looked upon as a specimen of good taste. Rough brick, thoroughly painted and sanded, can be adapted by its color to almost any of the lighter and open styles; while rough stone, with mastic, answers well for any of the heavier and compact styles.

The second question, how far all the buildings of an enclosure should conform to the principal mansion, is no less important than the one just considered. In general all buildings coming into one range of view should accord with each other in style. In a small private enclosure there is usually but one main view; all the buildings being seen together. In more extended private or public grounds each range of hills, or even thick shaded avenue, has separate fields adapted to an entirely diverse order of architectural decoration. In these larger works, thus separated into parts, the same general principles of adaptation already observed should be allowed control. The chapel of a cemetery may be a Grecian temple or a Gothic Cathedral in type; but if the model be Grecian it should be of white marble or material which may be made to imitate it, and should stand on a gentle eminence or in a field little encumbered by trees; while if the Gothic be the style it should be of dark stone or kindred material, and should be reared amid a thick surrounding shade; while for harmony's sake the tombs and monuments in each cluster or range may well be of the same class whether Egyptian or Roman, Grecian or Gothic. So also in larger public grounds in cities, or in adjoining

country seats harmony should reign in single views. If, as in the villa Borghese, the effort be made to reconstruct in different sections the style of Egypt, of Greece and of later ages, for each class to be illustrated the ground most like in surface to the original home of that class of architecture should be carefully selected; while in the grouping of the varied styles in each class, the order of natural developement should be observed.

Sect. 4 The Bounding Limits of Grounds; fences sunken or raised, ditched or terraced; palings of wood or of iron; walls of brick or of stone; and hedges of shrubbery.

The design of the fence is to protect the grounds enclosed from injury by cattle or other causes. To accomplish this end there must of course be adequate strength; for which, material of fitting massiveness must be sought. The leading feature required in fences so that beauty may be added to utility is, as the best writers urge, that the fence be of such construction that it shall seem as little as possible to be a limit artificially fixed to the landscape. If it can be made to seem an extension of, or at least an addition to rather than a restriction of the vista of which it is a part, it accomplishes the end of art.

Two restrictions to choice arise from the structure of the surface to be adorned and from the supply of material furnished for the erection. If the face of the country be undulating, a fence may be raised entirely above ground to an elevation sufficient for the required protection without obstructing to any extent the view, by ranging its line in the depression of the surface. If the elevation of the grounds be but slightly above the general surface, an embankment of half the required height with an open fence filling the remainder of the elevation may give the desired aspect of uninterrupted extent. Upon a perfectly flat plain the resort may be to a ditch with a low fence on its interior or exterior bank, or a high but open paling so constructed as to give the slightest possible appearance of compactness. How much in violation of this principle close high fences of wood, brick or stone must be, is manifest to every one in passing such an enclosure. To the visitor within a garden thus enclosed there is a feeling of prison-like confinement, which takes away the impression of freedom and ease which is essential to true delight. The passer-by on the outside of such an enclosure feels annoyed and uncomfortable at the exclusive spirit which grudges him the pleasure of looking on beauties which should be for public enjoyment. It is manifest, too,

that the plants themselves were not made for such seclusion from the cooling breeze and such penning up to the scorching of the meridian sun; and their parched and yellow leaves seem to remonstrate against such unnatural captivity.

A wide latitude for variety is furnished within the range of the principles thus stated for the construction of field bounds. Where stone abounds an embanked wall forming the entire or half of the height required is tasteful; and usually an undulating soil will furnish this material. If a steep rise of the land lies behind such a wall its arrangement into terraces, of which the wall forms one stage, gives unity and completeness of finish. On flat sandy or prairie lands, an open paling fence or a hedge is most artistic; while in a meadow bottom, or in a country where neither wood nor stone abound, a ditch with its border fringed by a low hedge is at once a guard and a beauty. Where the limited extent of grounds allows such expenditures, especially in the family enclosures of a cemetery, which demand special lightness united to strength, open iron-work of rods, of wire-netting, of chains, or of foliated castings, is an artificial fence-work rich though expensive. Whether of wood, stone, metal or shrubbery the eye and hand of taste finds a special field for exercise of skill in devising artistic field-bounds.

SECT. 5. THE WALKS AND DRIVES; DEPENDENT AS TO DIRECTION AND CURVATURE UPON INEQUALITIES AND OBSTRUCTIONS OF GROUNDS, AND ON THE POSITION OF THE PRINCIPAL BUILDINGS.

The design, so far as utility is concerned, of a carriage-drive or of a foot-path, is to afford a road of access to different portions of the grounds, and especially to its buildings. The main feature to be sought, so far as beauty is an end, is to avoid sameness by giving a variety of views of the mansion and of the grounds in the approach. This end is secured best by a curved avenue whose sweep in the approach gives at every step in advance a new view.

When a mansion stands in an open level field there is nothing richer than a neatly mown lawn stretching from the highway to the mansion whose end or side is wholly exposed to view; while a straight avenue of shade-trees at one side of the lawn extends down to an entrance hid from the lawn; for though only one view is thus furnished so much is brought into the view that its separate features furnish a rich variety. Even on grounds, however, nearly or quite level, a curved avenue of approach will generally be preferred. If the face of the grounds be flat, or very slightly sloping, a single uni-

form curve is most tasteful. If the ascent be considerable, and especially if it slope in different directions, a change of direction, giving a winding approach, is most desirable; though in a carriage drive the sweep of the curve should always be gradual, never abrupt. In foot-paths of any considerable extent openness of surface rather than evenness is to be regarded. In grounds filled with smaller plants, as a vegetable or flower-garden, straight lines in paths are most in accordance with nature; for, in an open field men or animals naturally take the straight route as the shortest to a point. In a grove, however, among shade-trees it is natural to follow a winding, zigzag path in order to pass around the obstructions which the trunks and boughs of trees oppose. The serpentine is the true line of a wooded path.

The question how far rocks and old trees, deep dells and sharp acclivities should be left undisturbed in gardening, has been, as we shall see, the hinging pivot of broad discussion in English gardening. In general the less the features enstamped by nature on the landscape be interfered with, the better for the demands of true taste. As it is natural for passing animals and men to go round obstacles interposed in their path, so any permanent feature of a landscape will be a beauty not a blemish if allowed to remain. Though a stump, which an animal could not remove, is a monument of an unfinished work in the man who first cut the tree and therefore is unsightly by the road-side yet a sweep of a few feet to save a noble tree awakens pleasure to see a preserved work of the Creator's hand. While a low ragged rock just jutting above the soil seems no sufficient obstacle to turn man from his path in cutting a carriage road, yet such an obstruction in the track of a foot-path is a legitimate occasion for bending to one side. In general to every mind of ordinary intelligence the principle of nature, always that of beauty, will be ready with its suggestions in the practical work of arranging the drives and walks of a landscape garden.

Sect. 6. The conduct of water, dependent on slope of grounds; and its employ in fountains, rills and pools.

The presence of water in grounds is requisite for the useful ends of furnishing food to plants, and drink to man and beast; if not sufficiently abundant to give swimming space for water fowl and a bathing place for animals and men. A farm-house would go tenantless without a neighboring spring or a convenient well; and farming lands without any clear stream for pastured cattle would lack a

large share of the value which other features might give them. The introduction and conduct of water in landscape gardening, designed chiefly to promote beauty, must be controlled by the end of securing naturalness of flow. In water, therefore, acted upon only by the force of gravity, the slope of the ground is a controlling limit. A natural rill cannot of course be made to flow except down a declivity of natural steepness; as a quiet pool cannot exist naturally except in a plain or meadow. If acted upon, however, by an artificial force, as is always really or apparently true in a flowing or jetting fountain, any position or face of grounds in a narrow court-yard seems natural; though in extended grounds a jet seems more natural and therefore beautiful when spouting in a deep valley or from a hill-side.

In the conduct of water narrow grounds offer little variety in the movement of the water itself; and therefore invite accumulated adornment of the fountain jet and basin. One of the most interesting features of the houses of unburied Pompeii is the basin of the fountain in the little court-yard of private houses; either a richly carved vase rising above the floor, or a small pool on the ground level, walled with marble chipping, tastefully decorated with sea shells, and often surrounded by a group of miniature animals, living or sculptured; made, as is manifest, at first to stand upon a narrow border of grass sward ornamented with flowers. In the larger gardens of ancient and modern times art has exhausted its skill in designs for the improvement of this feature. In Eden four rivers had their rise; and Milton's imagination is specially exhausted in pictures relating to their varied conduct. The gardens of Jerusalem and Babylon, of Caserta and Versailles, have made real the pictures of oriental luxury uttered in romance and poetry. The steep hill-sides rejoice in sparkling and dancing rivulets, and projecting cliffs toss from their tops dashing and foaming cascades. Deep quiet dells are filled with shaded pools where the duck and swan enjoy a delightful retreat; and broad open valleys are basoned with lakes, on which light caiques and gondolas, richly canopied, float with fairy-like grace and bearing festive parties. The presence of water in grounds limited or extended is a chief feature of beauty; and its skilful conduct is the greatest success of the landscape gardener.

SECT. 7. THE LOCATION OF TILLED LANDS AND USEFUL PLANTS; AS VEGETABLE GARDENS, FRUIT ORCHARDS, WHEAT FIELDS, GRASS AND PASTURE LANDS.

The field bounds, the drives, and the water courses are the great outlines of grounds; the parts which on a map would be first drawn; and the features to which as fixed in nature all the arrangement of the different products introduced must be made to conform. These products will naturally be grouped in two classes; useful and ornamental plants. In large public parks or gardens, as also in the small private enclosures of a city residence, the entire area will be devoted to the ornamental. In all larger suburban retreats, whether large estates or village enclosures, utility is the main end, to which ornamentation is subordinate. In this the ancient Egyptian and modern Chinese have made their gardens wonders of success; the modern Chinese gardener supporting his family on a narrow area which an American would think insufficient for a vegetable bed; while at the same time he gives an air of finish and variety to the whole most pleasing to the eye. The ancient Romans, eminently practical as well as grand in their aspirations, made the growth of useful plants a main end, not only in their farms, but also in their villa retreats; as is seen in the Georgics of Virgil, in Pliny's treatises, and in Cicero's letters.

Regard is to be paid to the location, taken as a whole, of the useful products of a suburban retreat. Universal taste has suggested that a vegetable garden should not be made conspicuous by being placed in front of a mansion. Even in the great vegetable farms arranged along the numerous streams coming into such a port as Norfolk, Va., strips of land a mile in length though but a few rods in width, with the mansion three-fourths of a mile from the highway and near the water course on which the produce boats are laden, taste, everywhere asserting its sway, has introduced a shaded lawn in front of the mansion and has shut out from the point of the eye's ordinary view the grosser products of the soil. In small village enclosures, beds of the smaller vegetables, ranged on either side of the front area, are not distasteful; especially if symmetrically divided and shielded by a flower border, by a hedge or by a row of flowering shrubs. In general however tilled fields should be retired, and in the back-ground.

In grouping the parts of more extended grounds, where tilled land, hay-fields and pasturage are grouped, beauty requires that regard be paid to their relative position. There are certain suggestions of

taste that are instructive to the ordinary husbandman in this respect. The early and short-stalked grains, as wheat, show to best advantage in front of the taller maize; and a hay-field, always green, appears best intervening between the high road or drive and the tilled lands. In this respect the grouping of orchards, as apples, pears, peaches, cherries, and other fruit trees requires special care for the best effect. Relatively to tilled grounds they should be in the rear; and as usually, both for security and just association, they are an accompaniment of the kitchen garden, they should be grouped beyond its beds. Relatively to each other the same regard should be paid to the forms of fruit-trees, whether drooping like the peach, or erect and conical like the cherry; and also to the colors of their blossoms, as that which guides in the juxtaposition of ornamental trees. Pasturage grounds for larger animals are usually located in the rear of tilled lands because the poorer and less finished portions of an estate seem best adapted to this purpose. The low grounds also are naturally devoted to pasturage; both because the water there gathers and the lands are adapted to this end. An enclosed park for deer, however, or a lawn close cropped by sheep, is an attractive and elegant ornament of front grounds. The kitchen garden, other things being equal, is appropriately located in proximity to the portion of the mansion devoted to cooking purposes.

The form which the patches of ground devoted to different products may take is naturally suggested. For convenience as well as beauty fields are usually cut in a square form and beds in rectangles. The farmer could hardly train his team or plough to move in any but straight lines; and he finds greater economy in working his land especially with the plough, when the four sides of the field are about equal in length. Planted corn-rows are necessarily in straight lines; and vegetable beds would be weeded with inconvenience except they were laid off in narrow rectangles. In general therefore the portions of an estate devoted to useful purposes will fix the straight line as the ground-form of all its arrangements; and this will give shape therefore to a certain extent to the adjacent ornamented grounds. It is only in the grass plots bordering the drives that curved lines are appropriate in lands devoted to useful purposes.

SECT. 8. THE RELATIVE POSITION OF ORNAMENTAL PLANTS; THE ARRANGEMENT OF LAWNS, FLOWER BEDS, BORDERS OF SHRUBBERY; AND THE COMBINATION OF ALL ACCORDING TO THE LAWS OF HARMONY IN DIMENSIONS, FORM AND COLOR.

According to their size the ornaments of grounds are divided into

plants and trees; forming two classes quite distinct in the rules for their employ. To the former belong herbaceous plants, whether annuals or perennials, whose stalk dies down every Autumn; and woody plants, or shrubs, which stand during the winter as permanent marks, if not ornaments of the garden. Below these two, and subordinate as a common second feature to both, is the grass-sward; sometimes serving only in a narrow strip as a border to a flower bed; but sometimes forming a broad carpet between clumps of shrubbery or beds of flowers.

The form which flower beds, the leading feature of ornamented grounds may take, is extremely varied; the curved line predominating. Those skirting walks and drives must, of course, take as their exterior line that of the avenue to which they are a border. Those located between walks, or in front court-yards, may be cut into stars, and ovals of various forms; good taste, however, deciding in favor of the simpler and less complicated outlines. Shrubs, especially the more arborescent, require, like trees, independent locations; either in lines at intervals along carriage drives, and in front of the mansion, or in clumps or single ornaments as a back-ground to flower or grass plots. The grass-sward intervening, serving as a back-ground to the figures in the picture, takes the outline of the prominent features to which it is subordinate.

As to relative position, regard must be had to summer and winter effects. In summer flowering plants and shrubs will be the chief feature. Arranged along drives flowers should be seen rather between, than in front of larger shrubs; as these again should intervene between, yet retire slightly behind the trees which line the avenue. By this arrangement the tender flowers will seem guarded from being crushed or cropped by passing animals; the tree trunk protecting the shrubs and the plants. Along foot-paths, and away from the reach of animals, the reverse order should be observed; the shrubs rising behind flower beds, and trees back of them. In broad spaces, intervening between avenues, a grass-sward lawn, dotted with arborescent shrubs, should form the central portion. In winter the arrangement mentioned still preserves symmetry of aspect; the shrubs rising at intervals cloaking the nakedness of the portions where the flowers have died, or have been laid down.

The main effect to be sought in the grouping of shrubs and plants is the securing of harmony in their order as respects dimensions, form and color. So far as dimensions are concerned harmony is attained by a gradation as to height so that those in the back-ground

shall be seen over those in front; or by making the distances of the larger shrubs ranged in the front such that the smaller plants are seen in vistas beyond. As respects form, tall and tapering shrubs, as the arbor vitæ, may be made to set off round-topped bushes, as the box or holly; and dwarfed shrubs show to advantage beneath the high boughs of the lilac or althea. The securing of harmony in color is yet more a master-work; for as in making up a bouquet the just gradation of colors according to the laws of contrast and complement, the shading of the lively into the sombre and the relieving of the whole by a back-ground of green, tests the skill even of an artist, so does the grouping of the natural flowers set in juxtaposition in the landscape garden.

SECT. 9. THE GROUPING OF ORNAMENTAL TREES; AS TO JUXTAPOSITION IN GROVES, AVENUES OR CLUMPS; ACCORDING TO CLASS AS DECIDUOUS OR EVERGREEN; ACCORDING TO FORM AS CONICAL, OVAL OR DROOPING; ACCORDING TO COLOR AS LIGHT OR DARK; ACCORDING TO MOBILITY AS RIGID, WAVING OR TREMULOUS.

Ornamental trees, the grand feature of public parks as well as of private grounds, have a double aim; the utility of their shade, and the ornament of their gigantic moving forms. Of the charms of shade trees poets have sung; the dearest recollections of childhood are associated with the old elm or oak under which the family sat to rest at noon or to converse at evening; and beneath shade trees the wise of earth have stood to teach, and the good have knelt to pray. Without the cool of their shade the thoroughfares of villages and cities would be intolerable to the laborer and man of affairs; and half the joys of the rich and of the poor alike in the days and hours of leisure from toil and care is found under the trees' grateful retreats. The same Creator, however, who in Eden made trees secondarily to serve purposes of "good" to man, made them primarily "pleasant to the eyes." As ornaments, trees from their size are designed to have grandeur as well as beauty, when seen from afar; while also nearer at hand, their perfect workmanship, elaborated by the Divine hand, outvies all man's work, made to be master-pieces only at a single point of view. Thus viewed several attributes of beauty secured by the hand of art may be made to add to their charm.

The juxtaposition of trees in groves, avenues and clumps may have reference to the double ends referred to above. The grove is a clustered group, delightful in itself and in its associations as seen

from afar. Its extent makes it a favorite resort for a quiet ramble or for the gathering of hundreds for open-air discourse. As such the poets have had in groves their sweetest dreams; and philosophers, as opposite as Plato and Epicurus, have found its shade a comment alike on the most ideal of spiritual breathings and on the most palpable of sensual comforts. The grove is scarcely natural unless formed of native forest growth, among which the oak towers as chief monarch; beneath whose giant tops not the axe but the grubbing-hoe and the rake have done the chief work. The avenues required not simply to line the walks of fenced grounds but also of open streets and highways, admit trees of greater variety; since they are supposed to be transplants. These, however, since the merit of giving shade is one of their charms, are restricted mainly to trees with branching tops and umbrageous foliage. Tree clumps are designed for ornament merely; and therefore admit every form and variety. In their rudest form they are the natural forest growth; left often in the clearing simply to save labor; because they cover rocky prominences, or line a marsh or streamlet; where, since they scarcely pay for the cutting, and no gain of arable land invites their felling, the woodman's axe has spared them, at least for a season. It is seen in a second stage of development, when the thrifty farmer, able to sacrifice somewhat to his tastes, leaves designedly, even on arable land, well chosen clumps of trees and plants, here and there a group of maples, willows and oak, or of alder, hawthorn or sweet-brier, to set off the beauty of his grass-lands. It reaches its rarest perfection when an extensive meadow is devoted expressly to this end; and the eye and hand of a genuine amateur follows for years the effort to make its ever-improved grouping a gem of art.

In the grouping of clumps the nicer principles of gradation in character, form, color, &c., have chief play. The test of winter's stripping invites attention to the character of trees as deciduous or evergreen. The bare limbs of the tree with forest-killed leaves, require as a relief front rows or occasional dottings of such trees as the spruce, cedar, &c., which are green during winter. The corners of intersecting paths especially should be marked by evergreen, to serve as land-marks in the season of barren frost. The shape of trees is an element of effective harmony. either when grouped in intermingled clumps, or when employed to express a sentiment appropriate to their place. The Turk regards the tall conical sky-pointing cypress as a fit monitor at the grave; while Christians have preferred the drooping form of the weeping willow as a funereal emblem. When

clumps are ranged in succession in a vista an enchanting effect may be produced by a skilful succession of the conical firs and spruces, the oval maple and poplar, the acorn shaped oak and chestnut, and the umbrella-topped willow and elm. Color too may be made to produce its effect in grouping. Where at every step of the beholder the vista changes, from the dark bottle green of the fir, lightening up through the varied shades of green and yellow, to the snow white of the silver-leaved poplar, the pleasing effect of near or distant lights may be secured. Yet again, the tree, much more than the waving grain and smaller stalks, may be made to produce the most sublime effects of motion. In the gentlest zephyr the ever fluttering leaves of the aspen may seem so many butterflies flitting over the tree-top. In the fanning of the cooling breeze the graceful sway of the maple's leaves and of the willow's pendants may picture the movement of nymphs through the woods. In the rush of the gale the mast-like roll of the "rocking pines," and the majestic sweep of the mighty elm, is like a giant's struggle with the wrestling winds; while the stiff cedar and the sturdy oak scarcely bending before the fury of the tornado, stand like the granite obelisk reared by man, or the tall cliff planted by the Almighty arm, immovably secure. There is no work to which man's skill and power can give shape that has combined so many elements of beauty and grandeur as the noble trees that may tower over a landscape garden.

SECT. 10. ARTIFICIAL ACCESSORIES; AS SCULPTURED FORMS; RUSTIC SEATS, ARBORS AND GROTTOES FOR REST; AND SWINGS, VEHICLES AND BOATS FOR MOTION.

The comprehensiveness of gardening as an art appears in the appendages of sculptural decoration and architectural ornamentation which may be added. Besides the buildings essential to every human abode those designed merely for occasional shelter or rest or even for simple ornament may be made the gems of a landscape; while sculptured forms may decorate enclosures too small for architectural erections.

How truly sculpture is adapted to open air positions is seen in the fact that in both ancient and modern times sculpture to a great extent demands in its very idea an out-door location. The same religious conviction that peopled groves and rocky heights with the spirits of rural deities, fixed the nature of their shrines. The ancient descendants of Ham, peopling Canaan, planted the hill-tops with groves; that in their free shelter, rather than in prison-like temple-

cells, the images of their deities might be placed. The fountains and gardens of the Romans, like those of Baiæ, of Cumæ and of Egeria, could not keep alive their storied charm without sculptured deities to people their secluded retreats. The exhumings of ancient Pompeii reveal these images still presiding in the open and inner courts of city dwellings; while the excavations of ancient villa residences show that groves and open pleasure grounds were all alive with sculptured throngs. Among the rescued works of ancient sculpture, a large proportion are only fitted for the garden area, under the open sky. Statues of rural deities, as Flora, Ceres and even Diana, never seem truly natural except in the field and forest. Vases of larger proportions, designed either for growing flowers or flowing waters whether thus employed or not, were adapted only to the uncovered canopy of heaven. All life-size or colossal work in bronze, especially equestrian statues, proclaim in the very material of its composition that it was made to endure the wear of exposure to the elements. The thousand devices, especially for fountains of flowing water, carried in the gardens of Versailles to an extravagant extreme, all are expressive only in the open air. Of course funereal monuments in every age and land, the larger demand on the sculptor's art, are companions of the green sod that covers the dead.

The resting-places furnished by miniature architectural structures, are a summer delight in gardens. Among the open trees of the walk or grove, rustic seats are the simplest, and sometimes the only lounges appropriate; as to their material and form the more conformed to nature the more truly artistic. The seat may be a moss-covered bank of earth, a stone smoothly hewn, a lounge of wicker-work, a rude chair formed from jagged and knotty boughs and vine-branches; or a seat of bronze or iron, cast in imitation of foliated and intertwining boughs. In more open portions of the ground a canopy as well as a seat is required; and almost every form of rural shelter has been conceived. The extemporized booth made of mere boughs of trees, the wooden frame with open or close lattice and clad with creeping vines, the plain shed-like roof of wood, the richly adorned Asiatic kiosk, all have their place in history and their appropriate employ in the more rustic or refined portions of a garden. From the gourd-covered booth under which the Hebrew Jonah sat to the summer parlor of Eglon the Canaanite lord, this feature of a public or private garden has its peculiar attraction. Yet again, for deeper seclusion and as a retreat from intenser heat, the grotto has its own peculiar place in art. It may be natural, a native cavity in

a rocky hill-side; or it may be artificial, reared of rude masonry, covered without by an undisturbed thicket, and within decorated with shells lining the edges of its thickly sanded floor, with covered seats ranged along its sides, and with lichens and carved reptiles clinging to its walls and ceiling.

Above all, accessories which give the delight of motion are appropriate to the garden. The swaying of the swing hung upon a strong oak or elm is a perennial delight of childhood; as also the pigmy carriage drawn by hand or dragged by neatly harnessed goats. In larger public grounds no recreation is more fascinating than the sweep of the light row-boat. The dreamy romance that clusters about the Turkish caique on the Bosphorus, and that lingers fragrant around the dark gondolas of the Venetian canals, adds its peculiar charm to the delight of boat riding upon a pleasure-ground lake. In the artificial accessories of public grounds an ever new freshness and zest for the ordinary frequenter can be kept alive with which the most costly works of higher art cannot keep pace.

Sect. 11. Animal accessories; smaller and larger quadrupeds wild and domestic; birds free or caged; fish and reptiles.

Man was not made to be solitary; the water, the air and the dry land was peopled by other moving creatures long ere he appeared on earth; and when he, the monarch of all, was placed in his garden-abode animals adapted to his service were already awaiting their lord. As the first garden would have been desolate and objectless without insects to suck nectar from the flowers, birds to flit and warble among its trees and feed on their fruits, quadrupeds to browse and frisk upon its green sward, and even fish and reptiles to people its waters and marshes, so every garden since framed by man has been made more Eden-like by animal accessories.

The domestic animals of the farm are naturally the first to be sought. The horse and the cow, the sheep and the goat, that feed upon the herbage unfitted for man but made for these his servants, are still more a source of pleasure and of pride to their possessor, however rustic his habits and however uncultured his mind. The opulent and cultured proprietor of an elegant estate has a yet higher ambition to possess the choicest varieties of useful domestic animals, such as the best breeds of cattle and of sheep; while some will add superior horses and dogs. To these domestic animals, not strictly the adornment of an estate, rare quadrupeds such as the deer, the gazelle, the elk or buffalo may add the charm of novelty; while even

the smaller animals, such as the hare and squirrel, well domesticated, are a pleasing accessory to extended country grounds, or to an open city square. Besides these animals feeding upon herbage and running free, more extended, and especially public grounds, may add beasts of prey that must be confined by a chain or cage. Native animals of America such as the fox, the wild-cat, the wolf and the bear may be readily obtained for ordinary public gardens; while the monkey, the leopard and the lion, the more common foreign beasts of prey, may be added to rarer collections. It is a grand conception which gathers such a collection as that of the Zoological Gardens at Regent's Park, London; worthy to be ranked in higher art.

After quadrupeds the bird tribe are a desirable accessory to pleasure-grounds. While the ordinary farmer prides himself upon what he calls his "stock," the farmer's wife has a kindred delight in her "poultry yard." Here may be seen gathered various species of hens, turkeys, ducks and geese; whose tending and feeding is a pleasing daily care, not simply for the profit, but also for the pleasure they afford. To these the richer land-holder will add the peacock for his barn-yard, and the swan as the fairy tenant of his artificial lake. In addition to these tenants of the low grounds the pigeon, the swallow and the wren are always, even to the farmer's family, coveted tenants of the eaves of out-buildings; while also the caged canary, the mocking-bird and the parrot are favorite enliveners of the winter parlor and the summer piazza, and the chained owl and eagle are not unworthy accessories to a public garden. There is of course no limit to the extent to which these collections may be carried in such grounds as the Surrey Gardens of London.

Even the lower orders of animals, fish and reptiles, have their place as the adornments of a garden. The same provident Creator who has made the frogs of the ditch and the fish of the brooks to be a source of delight to the juvenile mind, has made the higher taste of mature culture to find a pleasure in these departments of his perfect creation. The land tortoise is a welcome nestler under the broad leaves of garden vegetables; and even the lizard on the wall, and sometimes too the serpent in the grass, is a source of interest if not pleasure. The tiny gold-fish in the little glass aquarium of a modern piazza is a development of that same taste that led to extravagant expenditures of the Greeks in Aristotle's time and of the Romans in the days of the Emperors, who filled their artificial basons with the choicest of the finny tribes. The ancient, as well as modern sugges-

tion of freezing choice varieties of fish, and their winter transportation thus to distances over which they could not be carried alive in summer, is an interesting illustration of the taste for such accessories to beautified grounds inherent in man's cultured nature.

SECT. 12. THE REGARD TO BE PAID TO CLIMATE, TO ALTERNATION OF SEASONS AND TO BLEAK OR SUNNY EXPOSURES, IN THE CHOICE OF PLANTS AND IN THE STYLE OF FINISH FOR BUILDINGS.

Many writers on Landscape Gardening lay special stress on the regard which should be had in the choice of plants and in the finish of buildings to the demands of climate, the alternation of seasons and even to the slope or shelter of a hill-side on which a mansion is reared; since a southern exposure in all northern latitudes is far more sunny and thus invites plants less hardy and a style of building more open and airy than is fitting in a bleaker position. This may be exaggerated; for summer is much the same as to degree of heat in all parts of the temperate zone, while in the richer gardens only occupied by their proprietors in summer, conservatories may be built in which to winter tropical or delicate plants. Since thus disparities of climate and the transitions of the seasons may be to a great extent neutralized, the chief attention, in this respect, is to be given to exposures, especially northern and southern.

Where utility is sought, however, regard must be paid in the choice of plants and trees to all the causes mentioned. The fruit grower finds that the apple and the pear mature best in a northerly, the peach and the plum in a medium, the fig and orange under a more southerly sky; as also among the cereals, rye, wheat and rice have correspondent latitudes for healthful developement. This distinction in trees and plants reaches to ornamental trees; affecting smaller trees less, since these may be guarded in conservatories during the winter and be brought during summer into the open air. Climate must be studied in the selection of shrubbery for a hedge; the hawthorn, the privet, the arbor vitæ and the osage orange having each their appropriate latitudes; while farther south, as in the gardens of Syria and Mexico, the cactus, which is a hothouse plant in the north, grows to gigantic size, and forms a strong and secure hedge. The stately elm falls a prey to insects in a southerly clime; while the fairest of the oaks, the willow or water oak, never shows itself in a northern forest, and cannot endure the winter exposure of a northern park.

The alternation of seasons is also in a measure to be regarded. A large class of trees as well as of plants, seem made for every clime.

This is beautifully illustrated in the fact that plants and trees accustomed to the rest from growth belonging to the winter of a cold region, learn, so to speak, in the torrid zone to take their needed repose in the hot dry season and to push their growth in the cool wet portion of the year; while in medium or temperate climes the same plants have virtually two seasons of repose, in midsummer and midwinter. In the choice of plants and trees, however, the evergreens, belonging to the lower orders in the scale of perfection, claim chief attention. A cemetery hedge which must be visited alike in summer and winter, since death has "all seasons for its own," should be of those classes of shrubs whose foliage is ever fresh and full. An adorned landscape, being naturally regarded as of man's planting, should secure always on a small stage what the Creator does in a grander theatre; the humanly coated acres being a transcript of the divinely robed leagues; special care for instance being taken that the symmetry of summer foliage be preserved by so interspersing winter's green, that no portion may at any time look bare and barren.

Yet more importance is to be attached to southern as opposed to northern exposure. The degree of heat which the earth receives from the sun depends mainly upon the perpendicularity and consequent directness with which its rays fall. Any child can test this by holding the back, or more sensitive portion of his hand near a fire; turning the hand so that the rays of heat strike it now in perpendicular lines and now at an acute angle. The sun is much nearer in winter than in summer to those portions of the earth which are in northern latitudes; but its rays warm less the portion of the earth turned from its disk because they fall so obliquely upon it. For the same reason the summers of nearly all portions of the temperate zone, though more days are hot in a southern than in a northern latitude, are of about the same temperature during the hottest of the season. For this reason, too, elevated mountain regions have about the same degree of coolness as a summer resort in a far southern latitude as in a high northern. Of this principle the ordinary farmer knows how to avail himself; planting his garden for early vegetables where the sun strikes in directly from the south upon their beds. The vintner seeks the hill-side because the sun's rays strike perpendicularly upon it instead of obliquely as on the plain at its foot; and thus he secures both the rapid growth of his vines and the ripening of his fruit. This principle must be a controlling one with the skilful gardener in the location of very many of the products of extended grounds.

In the construction of buildings these same facts will have their influence. In colder climates houses generally will be made of more durable material and of more compact and close structure. The large class of houses built, however, for suburban residences, and made a leading feature in surrounding grounds, are designed for summer residences only. While therefore the permanent dweller in the open country at the north will build his house with close windows and small porticoes, and at the south with wide piazzas and large open windows, suburban retreats will naturally everywhere take the light style of southern latitudes. Special regard, however, both for the sake of health and of pleasure, should be paid to exposure in the location of a mansion. A long range of edifices should not, if possible, front due north and south; since one entire side will in that case never see the sun's light while the other will be blistered by the continued beating of its rays. Especially should the location of a house upon a northern slope be avoided; since then the entire structure will to a certainty be shut off from the direct influence of that orb which like its great antitype "the Sun of righteousness" has always literal "healing in his wings."

CHAPTER III.

ANCIENT AND ASIATIC STYLES OF LANDSCAPE GARDENING.

Gardening, as already intimated, is the most ancient of arts. The first home of man, as tradition and revealed history assure us, was a garden; man's first employ being to dress and keep it. The first, also, of the family which was to people the restored earth, Noah, became a gardener. As the early home of mankind was in Asia so primitive gardening was an Asiatic art; and the people of that continent have retained this, as other arts, from the earliest periods of history in its pristine stage of advancement.

As gardening begins with the works of nature, not simply as a model after which to copy but also as a finished work to be modified and repaired by the hand of art, so it is the art necessarily most conformed in its style to nature's method. The leading peculiarities marking in any land and age the arts of sculpture, architecture and painting, will be found to characterize this art; such for instance as

extremes of vastness and diminutiveness in size, fondness for the distorted and grotesque, and want of expressiveness especially in distant or perspective views. The extreme antiquity of the art is exemplified in the Garden of Eden; its first and rudimentary stages in the Egyptian and Assyrian; its second stage of advance in the Syrian and Persian; its culminating influence in the Grecian and Roman; its lingering sway in the early Christian of Southern Europe in the Middle Ages; while its present type may at this day be studied in the Turkish and Chinese gardens.

Sect. 1. The Primitive "Garden of Eden;" as the perfection of Nature and Art.

The Sacred narrative of man's first abode, confirmed and illustrated as it is by universal human tradition, is an interesting proof that Landscape Gardening is a natural aspiration of man; a love for a union of the beauties of Nature and Art implanted by his Creator for a wise purpose. To the traditions of that primitive garden abode, and the disposition of Asiatic nations each to claim their own land as its location, Milton and later writers refer, not to set forth their differences, but to add confirmation to their actual and concordant truth. Milton alludes to "the fair fields of Enna by gloomy Dis;" to the "Sweet grove of Daphne by Orontes;" to the "Nyseian isle girt by the river Triton;" and to "Mount Amara, under the Ethiop line by Nilus' head;" only to show how "wide and remote were all these" renowned gardens both in place and perfection, "from this Assyrian garden."[1] Many have commented on the Grecian tradition of the Hesperides, "the garden islands of the blessed," often mentioned by Hesiod, Pindar, Herodotus, Strabo, Pliny, Ovid and other Greek and Latin authors, as showing the power of this Asiatic tradition to claim the faith of the most cultured and most practical nations of the Arian stock. Yet other critics, tracing back the history of this tradition still farther to the exalted family of Japhetic stock near whose original home Eden seems to have been located, have quoted the Pouranas in the Sanscrit tongue of the Brahmins of India, and the Zendevesta in the older dialect of Persia. According to the Pouranas in the top of the golden mountain Merou, in a bason like the seed cup of the lotus flower, is the garden abode of happy spirits, from whose sweet vales flows a river that parts into four branches to water the

[1] Milton's Paradise Lost, Book IV.

earth; where wave the cool groves of Indra, among which stands the sacred Jambu Tree, whose flowing sap supplies a river of the waters of life, of which the blessed may drink to satiety. In the Zend tradition the mountain Al-Bordj is the garden home of good spirits; whose fountains are called "the navel of waters."

The intimation of the sacred record as to the location of this primitive abode of man is sufficiently definite; while historic tradition from the earliest time down to the present day is in accord. This fixes its site in the magnificent basons of the Caucasus Mountains, whose genial clime has been in all ages the native home of the most finely developed portion of the human family, the Caucasian or Arian stock. Moses[1] says the garden was planted "in the east;" this designation indicating always in his narrative the longitudinal location of the rich tract of Asia through which the Euphrates flows; while his mention that the first parents of mankind were driven out of Eden to a land yet farther to the east, and that the family saved from their descendants by the ark landed upon Mount Ararat at the South-east corner of modern Armenia, fixes quite definitely both the latitude and longitude of the region. Yet again the naming of the Euphrates and Tigris as two of the four rivers whose head waters were to be found in Eden limits more nearly the special location. This definite statement of the Sacred history is in accordance with the tradition recorded as early as B. C. 550 in the Zendavesta of Zoroaster, and now familiar among the people of Armenia, that Eden was located amid the delightful mountain valleys that form the heart of their land, now the home of the highest types of the Caucasian family.

The great extent of the region called Eden, the broad park-like character of its garden, is recognized from many particulars cited in the Sacred narrative.[2] It embraced that far extended range of the Caucasus, from whose sides in Moses' day, as now, issued the streams that fed the two great rivers flowing south to the Persian Gulf, and two others, one of which seems to have emptied into the Caspian and its fellow into the Black Sea. The comparison made by the same writer between it and the valley South of the Dead Sea before that sea was made to close over it, a rich region not less than twenty miles in length and eight or ten miles in breadth, and again to the rich valley extending eastward from the Delta of Egypt near where an-

[1] See Gen. ii. 8–15.

[2] See Gen. ii. 10–14; xiii. 10; Ezek. xxxi. 8, 9.

cient Zoan stood, both these comparisons indicate a wide extent of country. The mention again by the prophet Ezekiel of "cedars" growing in this garden is indicative that mountain regions were enclosed within its circuit. Milton's varied and specially accurate scholarship has led him to embody his conceptions in a picture of corresponding scope.

The enumerated beauties combined in this region of early loveliness suggest many elements conspiring to its general effect.[1] The mineral riches which Moses describes as in the regions through which the rivers issuing from Eden flowed are by the prophet Ezekiel located in Eden itself, as "delights of the garden of God;" "every precious stone, the sardius, the topaz and the diamond; the beryl, the onyx, and the jasper; the emerald, the sapphire and the carbuncle; and gold."[2] The waters, as Milton pictures, bursting up in under-ground fountains and dashing in cascades on the mountains, "the grots and caves of cool recess," festooned by creeping vines, redolent with the perfume of flowers and fruits, were doubtless real elements of beauty. Among "trees good for food," or fruit-trees, the fig is mentioned by Moses; and among shade or ornamental trees, "pleasant to the sight," the cedar, the fir and the chestnut found only in the mountains; to which mention of the Hebrew, Milton rightly adds the pine. Amid the hills, on broad pastures, the flocks and herds must have fed; perhaps on Milton's "lawns and level downs." There too must have bloomed, beyond Milton's power to fancy, every form and hue of grace in flowers.

Above all these insensate things, minerals and plants, were the animal accessories; birds filling the groves with beauty and melody, and quadrupeds, fish and even reptiles crowning the circle of charms. How near these were to man as pleasing associates is intimated in the general relation assigned to him as their lord, in the passing of all before him and his naming each one, and in his looking among them for companionship, until woman, a being of his own nature, was graciously granted.

In this garden-paragon of nature, "perfect in beauty," Adam was placed "to dress and keep it;" while Eve was to be "an *help* meet for him." The thought and feeling of man, his science and art, were to be exhausted in new studies for the improving of landscape

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[1] See Ezek. xxviii. 13, and Paradise Lost, Books IV. V. and IX.

[2] Gen. ii. 9, 18, 20; iii. 7.

beauty and fertility.[1] Ere sculpture or architecture were dreamed of, their united aim in forming walks and bowers for shelter was, to

"Lop overgrown, or prune, or prop, or bind;"

Adam's rougher labor being to wind

"The woodbine round the arbor, or direct
The clasping ivy where to climb;"

and Eve's lighter task to support

"Each flower of slender stalk, whose head though gay
Carnation, purple, azure, specked with gold,
Hung drooping unsustained."

The first garden made for the abode of man was a work of human as well as of Divine art.

SECT. 2. EGYPTIAN AND ASSYRIAN GARDENS; CONTROLLED IN THEIR FEATURES BY THE SAMENESS OF SURFACE AND RICHNESS OF SOIL BELONGING TO LEVEL RIVER BOTTOMS.

The influence of location on architecture and sculpture has already been noticed in the effort of the Egyptian and Assyrian artists to overcome by excessive massiveness and elevation the depressing effect of the low grounds on the Nile and Euphrates. This structure of country was in gardening yet more controlling; and that from two causes. A land that has no upward curve, its surface presenting unvarying straight lines, allows only straight lines in its borders, walks and other leading features; while the rank-growing vegetation natural to a rich alluvial soil gives a coarseness of form and color. Numerous historical allusions, illustrated by the pictured representations on the walls of ancient tombs, and confirmed by modern customs, enable us with great accuracy to reconstruct the Egyptian garden of the age of the Pharaohs.

Moses,[2] addressing the Hebrew people familiar with no other land than Egypt, represents "gardens" as located "by the river-side," having "cedar trees by the water;" and the whole land "watered with the foot as a garden of herbs." The sculptures of the tombs picture the river, or a large canal, in front of gardens, and rows of dark conical trees, like the cedar, lining its banks; while all the

[1] See Isaiah li. 3; Ezek. xxviii. 12; xxxvi. 35, and Joel ii. 3, and Paradise Lost, Book IX.

[2] Numb. xxiv. 6; Deut. xi. 10; Gen. xli. 57; Ex. ix. 32; Num. xi. 5; Exod. xv. 27; xxviii. 33; Num. xx. 5; Deut. viii. 8.

beds of flowers, clumps of trees, vineyards and fish pools are geometrically squared. Utility was a leading object in these gardens; the whole land even for wheat being divided into beds; vegetables as "melons, cucumbers, onions," and a celery-like grass, rendered "leeks," were interspersed; while the palm, the fig, the pomegranate and the vine formed borders. On the walls of the tombs these fruit trees, and especially all the processes of culturing, gathering and employing the grape, are pictured; and in the fruit vases deposited with the dead the fig, prune and various nuts are found preserved. Among ornamental trees were found the grand cedar, beautiful in its conical form and ever-green hue, and the lign-aloes with its spicy fragrance; and on the tomb walls marked skill is shown in grouping small trees, especially those of stiff conical forms beneath and between those having spreading and waving tops.

At frequent intervals in the old Egyptian gardens appear pools of water, which seem to have a triple purpose. On the surfaces of many are clustered the flowers and buds of the water-lily family, the lotus and papyrus; the root stalks of the former serving as a common food in Herodotus' day, and those of the latter when stripped, pressed and made to adhere by their own gluten being the common Egyptian paper; while the flowers, as the tomb sculptures everywhere show, were an acceptable offering to deities and to rulers, as well as a favorite female ornament on festal occasions. Along the sides of these pools were bred the varied and beautiful water-fowl now so common on the Nile; the crane, the pelican, the swan, the duck and the princely little ibis; while within their waters abounded the sweet fish admired by the ancient Hebrews and by modern travelers, whose capture in nets, as sculptures show, was a favorite amusement. Finally, as architectural accessories, small temples or shrines of deities, little lodges for the guard of the vineyards, arbors for noontide shelter, and little round towers for the shelter of pigeons, beautified then as now the Egyptian garden.[1]

The Assyrian gardens seem to have been of the Egyptian model. The banks of the Euphrates are level like those of the Nile; its canals for irrigation are kindred; the style of sculpture and architecture on both these streams is of the same type; and these controlling causes naturally led to corresponding features in Landscape Gardening. The earliest mention of gardens in Assyria is found in the

[1] Num. xi. 5; Isa. xix. 6, 7, 10; Ps. lxviii. 13.

book of Job;[1] who, as a Chaldean, probably represents the Japhetic stock, in the age when Melchisedek adorned the Hamitic, and Abraham the Shemitic families. From the allusions of this early drama bearing his name the gardens on the Euphrates seem to have been traversed by streams; water-plants and rows of trees along the streams, clumps of hardy trees in rocky places, shade trees as the willow, and fruit trees as the olive and vine, were cultured with care; while lodges to guard the fruit and presses for wine were erected within garden enclosures. From Hebrew writers[2] we learn that the Assyrian gardens bordered as the Egyptian on the river-side; that those about Babylon and Nineveh, were attached to palaces, and enclosed within the city walls, thus adding to their extent, as Diodorus and Layard also mention; that rows of cedars and willows served as borders, the latter tree being a special ornament in the East; and that the fragrant lign-aloes and the rapidly growing arbor-sheltering Palma Christi, were, as Herodotus confirms, Assyrian as well as Egyptian delights. The allusions of early writers have however in Assyria no monumental records such as those of Egypt to confirm and illustrate their statements.

The great writers of the age of Augustus, Diodorus and Strabo dwell with special interest on the hanging gardens erected by Nebuchadnezzar king of Babylon to please Amytis his favorite Median wife; who in the unvarying plains of Babylonia sighed for something like her native hills. Those gardens rose in terraces like the Sakhara pyramid, having a base four hundred feet square and a perpendicular central height of three hundred and fifty feet. The foundation walls of stone were of immense thickness; strong arches sustained each successive range of terraces; and broad and easy flights of steps mounted from one stage to another. The floor of each terrace was made strong and water-tight by first laying down flat stones sixteen feet long and four feet broad, then bricks laid in cement, next reeds saturated with bitumen and finally a lining of sheet lead; on which the mould was deposited. Upon the upper terrace was a hydraulic machine for raising water to irrigate the whole; and from the parapet of the higher terraces projected balconies and latticed summer apartments where the royal pair could enjoy the fresh breeze and the broad prospect.

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[1] Job vi. 15; viii. 11–17; xiv. 7–9; xxiv. 6–11; xxvii. 18; xxix. 19.

[2] Num. xxiv. 6; Ps. cxxxvii. 1, 2; Jonah iv. 5, 6.

SECT. 3. SYRIAN AND PERSIAN GARDENS; ILLUSTRATED SPECIALLY AT JERUSALEM AND PERSEPOLIS; ALLOWING THE VARIETY OF FEATURES BELONGING TO A ROCKY HILL COUNTRY.

Though in sculpture and architecture the Egyptian had formed Hebrew taste, in landscape gardening, controlled by face of country and productions, the association of these two nations exerted less influence. Though in some respects like the Egyptian the leading characteristics of the Syrian gardens were like the Persian. Two distinct classes of gardens appear at an early day in Syria. One was limited in extent; and in this respect like the Egyptian and intramural Assyrian gardens. The other covered a wide area of diversified surface, and in this respect corresponded to the "Paradise" or park of the Persian; a Persian word used by Xenophon the classic Greek biographer of Cyrus, to describe the Persian parks which he saw in his march through Asia Minor and Syria to Babylon; the name adopted by the Greek translators of the Hebrew Scriptures for the primitive garden abode of man as well as for larger Persian and Hebrew gardens; and borrowed also by Luke the finished Greek scholar to designate the abode of happy spirits after death. The smaller gardens, were in the neighborhood of towns and cities; the parks were at some distance from large cities in districts wild and uncultured.

In the days of the kings of Israel, particularly of Solomon, minute details as to smaller gardens are given.[1] These are called "gardens" of "herbs," of "spices," of "nuts," of "cucumbers," evidently indicating the special products for which they were designed. The fences, unlike the mere dykes that enclosed an Egyptian garden, were sometimes walls of stone, this material being abundant and used to this day in terracing and fencing in the hill country of Judea; and sometimes "hedges," probably, as in later days, of the giant cactus which grows to the height of eight or ten feet, and also of prickly thorn. The plants reared in gardens were primarily garden vegetables, herbs, cucumbers and other esculents; Pliny remarking, "Syria is most laboriously cultured for gardens; and thence the proverb among the Greeks, 'The many garden vegetables of the Syrians.'" Among herbs were "mustard," and other

[1] 1 Kings xxi. 2; Cant. v. 13; vi. 11; Isaiah i. 8; Prov. xxiv. 31; Prov. xv. 17; Isaiah v. 5; Mic. vii. 4; Cant. i. 14; ii. 1, 3, 12, 13; iii. 12–16; v. 1; vi. 2. 11; vii. 8; viii. 5, 13.

"spicy shrubs;" among flowers the rose or narcissus, and the lily; and among fruit trees the apple, the fig, the pomegranate, the date-palm, the pistachio nut, the grape-vine, and the olive. In addition to these natural products the smaller gardens were furnished with fountains, pouring refreshing streams around, at once to fertilize and refresh. Of this class[1] were the gardens in the narrow valley of Jehoshaphat on the East side of Jerusalem, called the "King's gardens;" and also the garden of Ahab violently taken from Naboth at Jezreel. At the later period of Christ's day, two gardens of this nature are mentioned in the suburbs of Jerusalem. The garden of Gethsemane, Christ's favorite resort for prayer, was a small enclosure now shaded by aged olive trees, lying in the valley of Jehoshaphat nearly half a mile higher up than the ancient king's garden. The garden in which Jesus was crucified and in which also his body was laid, an area about one hundred and fifty feet from east to west and two hundred and fifty from north to south, lying in the depression, bounded on the south by the northern slope of Mt. Zion, on the east by the western slope of Millo or Akra, and on the north and west by the "sides of the Northern" Mountains, is now entirely covered by the Church of the Holy Sepulchre, three hundred feet long and two hundred feet wide.

The larger, or park garden, of Syria is illustrated by many allusions in the writings of Solomon and of Xenophon. In Ecclesiastes, the composition of his ripe age Solomon pictured the park-garden, one of his "great works;" as in the Song of his youth he pictured the quiet garden of flowers, spicy shrubs and of fruit. This extended enclosure of associated palaces and vineyards, is called "paradise," both in the Hebrew original and the Greek translation of the Ptolemies; a word originating in the Sanscrit, Persian and other Japhetic tongues, and adopted in all the Shemitic languages, as the ancient Hebrew and modern Arabic, Syriac and Armenian. In this enclosure orchards of fruit trees, nurseries of forest trees, both for shade and for building purposes, were cultured; "garden-houses" or summer palaces were reared; and streams of water, supplied irrigation, bathing pools and ponds for fish.[2] In the groves of these parks seem to have been confined the apes which Solomon received

[1] 2 Kings xxv. 4; 1 Kings xxi. 2; John xviii. 1, 26; John xix. 41; xx. 15; Psalm xlviii. 2.

[2] 1 Kings iv. 23; Eccles. ii. 4–6; 2 Kings ix. 27; Cant. vii. 4; Isaiah xix. 10

from farther India; and in the open field strutted the peacocks brought from the same clime.

The chief park-garden of Solomon was located in a valley surrounded with hills full of springs situated about seven miles south of Jerusalem. Three immense pools, built with massive walls of stone laid in cement varying from about four hundred to six hundred feet in length and from two hundred to three hundred feet in breadth, now remain as relics of the "great works" of that park-garden. The water was brought into these pools by digging down around the natural springs and covering them in by arched passages under ground; while from these pools the water was conducted in a massive aqueduct three miles northeast to Bethlehem and thence six miles north to Jerusalem. The abundant springs still gushing from the hills and watering numerous gardens around the old site, now called Wady Urtas, attest the beauty which a prince like Solomon might give to such a locality; while the native name, still preserved, "Mountain of Paradise," keeps alive the memory of its ancient glory. Besides this park south of Jerusalem this rich monarch erected a palace called "the house of the forest of Lebanon," near Baalbeck, in the valley between the two ranges of Lebanon, which belonged to Israel; while Phœnicia was on the west and Syria on the east. Thither Solomon seems to have transplanted, importing it from India, the Almug, or sandal wood, already obtained and grown in Lebanon by the Phœnicians, who acted as Solomon's sailors and merchantmen in his trade with India;[1] a rich-colored wood, still bearing its old Sanscrit name, and still a favorite article of export trade from India. From a similar park in the land of Israel, possessed by the Persian conqueror ninety years after the first return of the Hebrew people to rebuild their city under Ezra, Nehemiah was permitted by a letter to the keeper of the "paradise," to cut the timber needed in his work.[2] In the days of Augustus and of Herod the Great, Strabo mentions a "paradise," or park, of balsam trees in the valley of Jericho about fourteen miles east of Jerusalem.

As intimated, these park-gardens of Syria seem to have been copied from those of India and Persia; since the names given both to the park and to the exotic trees, birds and animals brought from India to adorn the park, as the almug, the peacock and the ape, retain in the Hebrew scriptures their Sanscrit form. The only classic Greek author who uses the word paradise or park is Xenophon; and

[1] 1 Kings vii 10; x. 11, 12; 2 Chron. ii. 7; ix. 10, 11. [2] Neh. ii. 8.

then chiefly in reference to those he saw in his expedition in Asia Minor. Speaking in his Cyropædia of the fondness for hunting, of Cyrus when in boyhood he visited his grandfather, Xenophon describes the park in which he was allowed to hunt; whose enclosure, however, seeming to the daring youth to make the sport unmanly, because secure, he insisted upon dashing into the thick forest and attacking there the fleet wild stag and the fierce wild boar with his spear. Again in his Anabasis, mentioning several parks on his march, he describes one in Phrygia thus: "Here Cyrus had a palace and an extensive park full of wild beasts, in which he was accustomed to hunt whenever he wished to give himself and his horses exercise. Through the wildest of this park the river Meander runs." In his Hellenics he speaks thus of parks in Asia Minor: "There was also excellent hunting there, both in the parks and the open country; while a river, full of all sorts of fish surrounded the entire enclosure, and there were also plenty of birds for those fond of fowling." This meeting of the Greeks and Persians in the enjoyment of the peculiar Persian garden, the park, prepares the way for the consideration of the Grecian art.

SECT. 4. ANCIENT GRECIAN AND ROMAN GARDENS; CHARACTERIZED BY GEOMETRIC EXACTNESS OF OUTLINE AND ELEGANCE OF FORMS IN ADORNMENT.

Gardening as an art has so much to do with the real, and so little with the ideal, that the Greeks seem never to have regarded it a high art. No originating genius in Greece was devoted to gardening; and no comprehensive principles in this, as in the plastic arts, were developed by Grecian intellect. Most of their methods in gardening seem to have been the natural suggestions of practical horticulturists in every age and land; and the plans of their gardens and parks designed for pleasure, ministering so greatly to the lower senses and but indirectly to the eye and ear, were borrowed from the effeminate Orient, whose ruling race most in contact with the Greeks was the Persian. The practical Romans made gardening more of an art than had the Greeks; and among them the characteristics of geometric exactness in outline and richness of ornamentation, kept alive in Southern Europe to this day, were fully developed and fixed in their type.

The gardens of the Hesperides are the first mentioned in Grecian legends. These gardens, simply alluded to by Hesiod and later Greek writers, were situated far west on the Southern or African

shore of the Mediterranean; or, as some infer from Strabo's mention, in Islands West of the African coast, perhaps the Isle of Madeira noted for its rich and tropical fruits and magnificent shade trees. From these Hesperian gardens, watched by a sleepless dragon, it was one of the labors of Hercules to bring away the golden apples of the tree specially guarded; which Atlas, the bearer of the world at its Western side beyond the Pillar of Hercules, assisted him in doing. Strabo calls the Hesperides the islands of the blessed; their very name from *espera*, evening, speaks of the Western sky glorious with the setting sun, and of "the cool of the day," so delightful even in Eden; and all these legends, the apples, the forbidden fruit, the home of the blest and the delight of the summer evening, have seemed to make this early picture of the Grecian imagination at once the re-echoing of a traditional voice resounding from the earliest times, and the outspeaking of Grecian taste turned to this art.

The gardens of Alcinous, pictured by Homer in the wanderings of Ulysses, seem to be a real instead of an ideal creation; though their author in his description perhaps wrote as an Asiatic Greek, picturing what belonged to the Orient rather than to Greece proper. Their proprietor resided in the Island of Corfu; and the poet's fancy probably put together the beauties that art had given to gardens in his day and land. This garden Homer describes as in front of the palace of the prince. It contained four acres, and was surrounded by a hedge. Its chief charms were its tall fruit-trees; among which the apple, pear, olive, fig, pomegranate and grapes, the most luscious fruits of the temperate regions, are mentioned. The peculiar mildness of the climate, softened by a prevailing western breeze, gave perpetual verdure and fruitage; the trees and vines being covered at the same time with buds and flowers, unripe and mature fruit. The plants were arranged in beds or parterres; among which jetted two fountains, one watering the garden, the other the palace. Other kindred spots of beauty, pictured by the early Grecian and later Roman poets as belonging to that age, such for instance as Calypso's fairy grotto, present an ideal that was suggested to Greek minds.

When however we pass the age of poetry and come to the days of the perfection of Grecian art and philosophy gardening seems not to have taken rank as a sister in the train of the Muses; the only apparent exception being the grove of Academus. At an early era in the history of Athens a public spirited citizen of this name, as Pausanias mentions, gave a lot of ground, about three-fourths of a mile

from the city, to the citizens for a gymnasium. The gymnasium of Greece as we know from Vitruvius was an extended enclosed campus with porticoes, and groves distributed through the area. Hipparchus, as Suidas states, tyrant of Athens about B. C. 520, surrounded the grounds thus given with a wall. Cimon the popular general and civil leader before Pericles, besides opening his own gardens to the public, greatly improved the garden of Academus; Plutarch stating of him, "He too first adorned the city with those elegant and noble places for exercise and disputation which a little after came to be so much admired. He planted the forum with plane trees; and whereas the Academy was before a dry and unsightly plat he brought water to it and sheltered it with groves, so that it abounded with neat avenues and shady walks." Diogenes Laertius in his life of Plato, states that a small enclosure within the bounds of the Academy was devoted exclusively to his School.

The apparent fact as to the Grecian taste for gardening seems to be, that, while the art was to a good degree appreciated, it was not esteemed a high art, and never studied or practiced as such. No Phidias or Apelles in this art ever appeared; and neither in the dreams of Plato's Republic, nor in the sober reasonings of his Laws, though he urges that for music and sculpture and architecture Government should make special provision, has the sage any suggestion as to gardens for public or private resort; the groves of Academus having for him no charm except their shade and seclusion. The gardens of Athens along the Ilissus and about suburban retreats, so far as we can gather from slight allusions of the Classic authors, were but plain mathematically squared court yards. The park that Xenophon pictures in the conclusion of his Anabasis as constructed by himself in Elis on the West coast of Greece is manifestly copied from the notions he had gathered among the Persians; the description of the two streams flowing through it, of the fresh fish in the lake and shell-fish on the sea-shore, of the hunting grounds for the boar, the antelope and the deer, and above all the mention that the beautiful little temple in it with its statue of cypress instead of gold, was after the model of that at Ephesus, shows that the model of this Grecian garden was from Asia. The mention however of the grove of fruit-trees around the temple, and of parts of the grounds devoted to horses, oxen, goats and swine, indicates that utility was not forgotten in the effort after beauty. The casual mention by the historian of Alexander, that Dinocrates, the architect of the temple of Diana at Ephesus and of Alexander's Egyptian city, proposed to

carve Mount Athos into a bust of the monarch, making one hand to rest on a lower peak and in its hollow a lake, while the other stretched to an opposite peak and held a city upon its palm, is one of the grandest conceptions of art as applied to the face of nature; though belonging to the degenerate day when mere massiveness began to take the place of elaborate finish.

The Romans made gardening to take a higher place than the Greeks; a fact sufficiently manifest from the devotion of time given by Cicero and other philosophic men of his age to their suburban villas; it is illustrated in the many suggestions as to its principles introduced by the philosophic Vitruvius into his "Civil Architecture;" and it is confirmed above all by the eminent popularity of the Georgics and Bucolics of Virgil, whose dry detail at our day would fail to awaken an interest kindred to that called forth among the Romans of the Augustan day. The fullest exhibition of the classes of plants familiar to the Romans is found in the ten books of the Natural History of Pliny the Elder, devoted to this topic; while the life-like picture which the younger Pliny has given in his letters of two of his own villas, affords a complete idea of the methods of ornamenting grounds employed in his time.

The Roman writers describe two kinds of villas; the "villa rustica" or country and the "villa urbana," or suburban villa. The former was surrounded by a farm; the latter was only a garden and grounds laid out for pleasure, not profit. The farm villa had two large courts, or shaded yards; one for servants and laborers' quarters, store-houses and other out-buildings; the other for the stables of horses and cattle. The private residence had its own enclosure corresponding to the "villa urbana." Two of these latter, belonging to himself, Pliny the younger describes at length; one called his "Laurentine" being his winter, the other called his "Tuscan" serving as his summer residence.

His Laurentine villa, Pliny states, is seventeen miles from Rome on the sea-coast; so near, he says, "that having finished my professional duties I can pass my evenings here without interfering with the business of the day." The road was sandy and heavy for a carriage, "but easy and pleasant to those riding on horse-back." The pleasant features of the drive thither were the diversified landscape, wood and open grounds, and especially meadows covered with cattle brought down from the Appenines during the snows of winter to pastures kept green near the sea. The house itself was close built for winter and sufficiently large. It was entered through a semicir-

cular projecting porch; back of which was a portico, whose sides were enclosed by windows for winter protection and sheltered by a projecting roof; and back of this was the *atrium*, or central hall, radiating from which were rooms including a gallery of curiosities, banquet halls and the kitchen in the rear. One of the rooms looked out on the sea, another on a terrace covered with violets, and the principal hall on the garden and *gestatio*, or play-ground. The garden was in the centre of the gestatio, separated from it by rows of grape-vines; and its chief fruit-trees were the fig and mulberry, to which alone the soil was favorable. The surrounding gestatio, a border of grass land on three sides of the garden, with paths and open space for general exercise, was without shade-trees to admit the winter sun; and was enclosed by a hedge of box, injured in some cases by the salt spray, and its intervals filled in with rosemary. The great want of the villa was a running stream; but water was obtained in wells easily dug, the water rising near to the surface and perfectly sweet though close by the sea. Pliny dwells on the grand sea-view during a winter storm as its chief charm.

Pliny's summer villa, north of the Tiber "in Tuscany" is described with yet more minuteness and enthusiasm. It was under the Appenines, in an amphitheatre of hills; the approach from Rome being a gradual prolonged rise. The soil was stiff, streams of water abounded, but there were no marsh-lands. The air was pure, cooled by breezes from the Appenines. The winter was somewhat severe, too cold for the myrtle and the olive; though the bay-tree, often killed by frost in the latitude of Rome, flourished in perfection. The mansion fronted south with a wide portico "after the ancient mode;" before it was the *xystus*, or court-yard, the *gestatio* for general exercise, the *ambulatio* or promenade, and the *hippodrome* or circus for riding, and behind the kitchen-garden, etc.

The mansion had a rich dining-room with a portico in front overlooking the hippodrome; before which was a spring-house shaded by four plane-trees, having in its centre a fountain emptying into a marble bason. Over this fountain was a bed-chamber, whose sides were ceiled with marble to half their height; above which the ceiling was frescoed with rural scenes, "the birds among the branches producing an effect quite as agreeable as carving." From a side-chamber a cascade was in view, falling from a rocky height; a feature "pleasing to both the eye and the ear;" and adjoining was the bath-room having three basons one of hot, another of cold, and a third of tepid water; the latter heated by the sun. Another side-

chamber looked out on the vineyard, having the hippodrome also in view. In the rear of the mansion, in a warm exposure, was the kitchen; adjoining which was the vegetable garden; and on the north side, remote from the sun, was an open portico, under whose floor was an enclosed low and cool grotto for resort in extreme heat.

In front, the court-yard was enclosed by a hedge of box, cut into the shapes of various animals; within which athletic exercises requiring little space were practiced; and around it was a promenade enclosed by a border of clipped evergreen. Beyond this were the gestatio and hippodrome; the whole of whose area was enclosed by a bank wall with a box-hedge rising in stages. The hippodrome had three rectilinear sides bordered by plane-trees covered with ivy; between which were clumps of box, and back of these bay-trees; "the plane-trees blending their shade with the bays." The fourth side, farthest from the mansion, was semicircular, bordered by tall dark cypress, which, he says, "vary the prospect and cast a deeper gloom." The inner walks around the circle of the race course were bordered by low rose-bushes; which, says Pliny, "correct by a delightful contrast the coolness of the shade with the warmth of the sun." Beyond the hippodrome's bank-walls was a series of fields and meadows, which he writes, "owe as many beauties to nature as that within the wall to art." A broad avenue bordered by box, cut in fantastic forms, among others into the letters forming the name of the proprietor, led by lateral paths to several fields. The first field was dotted with fruit-trees interspersed with obelisks and statuary. Passing to the next, "suddenly in the midst of this elegant regularity you are surprised with an imitation of the negligent beauty of rural nature in the contrast presented by a knot of dwarf plane-trees." A pathway here, bordered by trees cut in fantastic shapes and festooned with the soft twining acanthus, led to an alcove of white marble, supported by four slender columns, shaded with vines, furnished with a seat, beneath which a fountain gushed up, with a bason in front having a broad brim and filled from the fountain; where Pliny says he often took a noonday repast, making the bason-rim his table, having his dishes in the shape of ships and water-fowl floating on the water which cooled their contents. Fronting this alcove was a summer retreat of exquisitely carved marble, furnished with seats and jetting fountains with rills running round, having doors opening on one side into a green arborescent enclosure, and on another side into a small sleeping-room dark with overhanging vines. Pliny closes thus: "I have given this minute description to show, why I prefer my Tuscan villa to those

which I own at Tusculum, Tibur and Prænestе;" these three other villas of his at modern Frascati, Tivoli and Palestrina, showing the excess to which landscape gardening was carried by the Romans.

Virgil in his Georgics and Bucolics adds much to our knowledge of Roman horticulture. Among shade trees he mentions the branching elm, oak, walnut, chestnut, willow, ash, beech, poplar, and plane trees; the evergreen fir, pine, myrtle, yew, cypress and juniper; the flowering laurel or bay, the arbute and the almond; and the dwarf tamarisk, alder, broom and osier. Of fruit trees he names the apple, pear, quince, cherry, cornel and plum belonging to a cool, and the olive and palm to a warm climate; also the grape and strawberry flourishing in both temperatures. As creeping vines he notices the acanthus, ivy, ladysglove, and Egyptian bean; among flowers the rose, narcissus, poppy, hyacinth, marigold, daffodil, and violet; of spicy shrubs, the spikenard, lavender, dill and thyme; among garden vegetables the bean, vetches, millet, and Egyptian lentile; while even furze and sea-weed are not unnoticed. The fences commended are "hedges of box, lowly broom, or flowering willow;" whose branches are to be so intertwined that the withering frosts and browsing herds may not thin them too much. Location requires choice among the many species of the elm, willow, apple, olive, berries and grapes, the varieties of which latter Virgil poetically declares to be "numerous as are the sands on the Libyan sea-shore tossed by the Zephyr; or as the waves of the Ionian sea breaking on the shore when the southeast gale with most terrific sweep dashes the ships." As garden accessories Virgil alludes to statuary, and to water fowl as the crane, goose and swan; and to fountains, groves and grottoes. Order and skill in grouping plants, like, he says, to the wise massing of the parts of an army, is required "not only that the prospect may give delight to the mind, but also that the earth may supply proportionate strength to all." Climate demands trees and shrubs adapted; for though "the dark ebony of India, the sweet gum of Sabæa, the wool-bearing shrub," or cotton, "of Ethiopia, and the apple of Media," are garden treasures, yet none of these "can match the glories of Italy." Soil must be studied; for naturally "willows grow by rivers, elders in marshes, and the wild ash on rocky mountains; the sea-shore rejoices in myrtle groves, and the vine loves open hills, and the yew the north wind and the cold; lean clay and gravel fields woo the long-lived olive, the wash of the mountain rocks feeds vines abounding in wine, while loose crumbling mould nourishes best the corn." Exposure must be regarded; for "vineyards should lie

towards the setting sun." Æsthetic and moral principles, too, have influence; for, "the ash is fairest in the forest, the pine in gardens, the poplar by rivers, and the fir on lofty mountains;" while "the poplar is most grateful to Hercules, the vine to Bacchus, to lovely Venus the myrtle, to Apollo his own laurel, while Phyllis loves even the hazels." With the spirit of true art the poet urges that whatever be undertaken in gardening be perfected; contempt being heaped on "the keeper of a poor ill-furnished garden;" while the maxim is commended, "Admire a large farm; cultivate a small one."

Vitruvius, the architect, treats of grounds and gardening as subordinate to buildings. Healthfulness in location should first be sought: due light and heat for both man and beast, the chief requisite demanding a north front in a warm and a south front in a cold site; that the kitchen and stable be always in a warm situation; that to granaries and store-houses the air have free admission; and that in tenements ample arrangements for light and air, always easy to attain in the country though not in the city, should be made. The importance of this is urged by the effect of climate and sunlight on the character of nations; the "Ruler of the Universe" having established "a harmonious progression" in physical and intellectual development among men, of which the depth and strength of the voice is ordinarily an index; the Romans being placed "in the region mediate between extremes," and thus having both the "strength of body and mind" which makes them naturally fitted "for the sovereignty of the world."

The remains of ancient villas, now visited near Rome and Naples, illustrate, also, their structure. The villa of Cicero at Tusculum seems to have been afterwards occupied by that of Tiberius; and his sea-side retreat is covered now by a modern tower. Even the site of the famed villa of Mecænas at Tivoli, immortalized by Horace, is lost to tradition; of Pompey's at Albano some masonry in more modern structures are relics; while that of Cassius has furnished from its extensive ruins most valuable contributions to later collections of statuary. Of the Roman villas of the Emperors some ruins of Domitian's are traceable, mingled among modern dwellings; but grandest of all these relics is the villa of Hadrian at old Tibur. This vast work covered an area of eight or ten miles in circuit, lying between two streams; it comprised in its grounds fac-similes of the ancient Grecian Vale of Tempe, the Elysian Fields, Tartarus and the river Euripus; and among its buildings copies of the Serapion

of Alexandria, of the Poicile of Athens, of Plato's Academy and of Aristotle's Lyceum, besides temples, palaces, theatres, amphitheatres and hippodromes; designed to be a complete reconstruction of all past art in gardening and architecture. Finally the environs of Naples from Baiæ to Pompeii, mountain-sides, plains and sea-shore, are heaped with villa remains of Roman patricians and emperors. The town villa of Diomed at Pompeii, and the country villas of Hortensius by the sea-side at Baiæ, are sufficiently preserved to make the ancient past live in their ruins; while the actual reconstruction in later times of the villas about Rome and Naples links them to the gardens of the Middle Ages.

Sect. 5. Gardens of the Middle Ages; Christian and Muhammedan; Roman in arrangement, and Asiatic in adornment.

Varied influences, originating in civil, ecclesiastical and social connections with Rome tended to give shape to thought and life in the Middle Ages; thus controlling art. The Roman civil dominion pervading the world six centuries after Christ, and the subsequent ecclesiastical domination both in the east and the west, Roman in its character, influenced the form of gardening, as of other arts. Thus Charlemagne in the eighth century established gardens for improvement in horticulture, prescribing by a royal edict the plants that should be reared in them; while in later times cardinals who had gathered large wealth lavished their treasures in the planting and adorning of gardens around Rome, arranged after the ancient model, the Cardinal Alphonso d' Este in the sixteenth century being a leader in this improvement. At the same time the gorgeous ceremonials of the Old Testament, and reverence for the Oriental shrines of the Christian faith in the Holy Land retained in the Western as well as Eastern Church, led to Asiatic richness of adornment in all the arts. In the Northern spread of Christianity, the life of feudal lords in strong-walled castles and of learned monks in close-built convents made the common castle and convent gardens perfect counterparts of the old Roman court-yards in city residences.

The Castle Garden had as its enclosing bounds the walls of the fortress. Without this bound there was usually a moat, a few feet distant from the Castle walls; whose banks were carpeted with a nicely kept grass-sward, decorated with flowering plants and shrubs, and sometimes overhung both for health and pleasure with the willow and other shade trees. The interior enclosure of the Cas-

tle yard was laid off in small parterres and flower-beds; from which nosegays for gala occasions were furnished. The ruined palace of the Cæsars on the Palatine Hill at Rome over which still are heaped as Byron says,

> "Cypress and ivy, wood and wall-flowers grown,
> Matted and massed together,"

keeps alive as a sad relic the green around the old Roman's city mansion; while the Farnese gardens close by this ruin, are, in comparison a striking example of Medieval taste repeating the Roman style. In striking unison, too, many of the old Castles in England yet suggest in their ruins the structure of the gardens which once graced their interior and encircled their exterior.

The Convent gardens, still repeated in every portion of Christian Europe, Asia and Africa, are, even more than the Castle gardens, an embodiment of the Medieval Spirit in this art. The celebrated White Monastery of Coptic or ancient Egyptian monks, below Girgeh in Egypt, has now its few acres on the edge of the Desert surrounding the Convent cultured as a rich garden; while the neighboring Latin or Roman Convent in its palmy days supplied esculents and fruit not only for its two hundred resident monks, but for numberless travelers visiting it. The garden of the Greek Convent at Mount Sinai, an "oasis in the desert," is built in terraces on the Western slope of the Sacred Mount, well watered from the mountain springs, and thickly strewn with fruit-trees, as the apple, pear, apricot, quince, fig, mulberry, pomegranate, the olive and also the grape; at its foot vegetable beds, flower borders and spicy shrubs mingle their odors and flavors; while the tall blank outer wall is relieved by towering cypresses, and creeping ivy. In Greece the numerous convent gardens on the mountain-sides, still fragrant with ancient memories, with their cool grottoes and arbors, with their fruit-trees and vines, and their fragrant flowers, are sweet retreats ministering to the delights of sense and sensibility. In Italy, France, England, and even America, the modern Convent garden is everywhere found to be modeled after the ancient type, and to furnish an illustration of gardening in the Middle Ages.

Sect. 6. Modern Chinese Gardens; Characterized by fondness for the diminutive in dimensions and the grotesque in forms.

Lord Kames speaks of gardens as "being in China brought to greater perfection than in any known country." Regarding garden-

ing as a useful art this remark is important; for, as no nation has so dense a population as China, compelling extreme improvement of every foot of arable land, so in productiveness, no gardens surpass the Chinese. Regarding again, the amount of genius devoted to this their study and effort to render gardens attractive as well as productive, Lord Kames' statement is of value. A careful analysis however, of the elements of this art as practiced among the Chinese, will give it the same rank as their architecture, sculpture and painting, in the Asiatic stage of advance.

Many of the features of a Chinese garden are dependent on their use of horticulture as a means of livelihood. All the lands from necessity are divided up into small fields and each man cultivates his own with such crops as he prefers. The smallness of those individual fields forbids the introduction of either fences or hedges; for which there is really no room in China, since each little farmer is truly a gardener, his patches of rice and wheat, as well as of beans and beets being worked with the spade; while the hundreds of such patches devoted to individual culture, lying side by side and unseparated by fences, make the suburbs of towns one continuous garden. Every corner that can be made to take a fertilizer and give root to any species of plant is appropriated and forced to its utmost strength of production; and thus gardening is pre-eminently with the Chinaman a useful art. Where wealth permits garden ornamentation the Chinese show skill in mere imitation, with a taste for the lower effects of novelty and grotesqueness instead of grandeur and beauty. With rare limitation the beds and banks of artificial lakes and rills are made perfect counterparts of nature; having gravelly or sandy bottoms, serpentine and quiet flow, or dashing falls over precipices and a bubbling rush from cavern-mouths. Every rock and even stump is taken advantage of to form a contrast to the surrounding verdure; islands in artificial lakes are completely rocky and barren, or clothed with an exuberance of verdure and flowery shrubs. Trees are skilfully combined according to shapes and depth of green; and sometimes the effect of perspective vista views is attempted. The chief effort is at sudden transition, a striving for novelty, and a heaping of grotesque and pigmy forms in architecture and sculpture, such as miniature mills in the streams and boats on the lakes, wooden quadrupeds, clay reptiles and canvas birds; which seem collections of child's toys rather than the dignified ornaments of a manly work. It is this universal feature which forms the type of Chinese Landscape Gardening.

SECT. 7. MODERN TURKISH GARDENS; DISTINGUISHED BY LUXURIANCE IN NATURAL ADORNMENT AND VOLUPTUOUSNESS IN ARTIFICIAL ACCESSORIES.

The Turks, though of a hardy original stock, are a people given to sensual rather than intellectual delights. In all that relates to the fine arts, as gardening, specially revealing this characteristic, luxury rather than sentiment is the controlling aim. No one can visit a Turkish garden without being impressed with the palpable evidence that an elevated appeal to the eye is but secondary, and that even the natural features as plants, trees and waters, and much more the artificial accompaniments, are directly designed to minister to corporeal pleasures.

From the banks of the Nile quite round to the shores of the Bosphorus the richest Turkish gardens are located where the aid of flowing waters can be secured to give coolness to the atmosphere and to stimulate the growth of trees with dense foliage affording a thick shade. The flat river bottom where the palace of Shoobra, the favorite residence of the pasha of Egypt, is located is perfectly hidden amid spreading acacia and willow; the rankness of whose growth is promoted by the waters of the Nile, diverted into canals and forced into jets whose sparkling curves form a central feature in the garden. The clustered palaces of the pashas of all the Turkish provinces lining the shores of the Bosphorus, are made to crown points on the highlands where the cool breezes best reach them, and where mountain rills bathe the feet of the cliff and cool the soil.

The voluptuous character of the oriental garden is set forth in allusions and descriptions of Muhammed in the Koran; the sacred authority in art and general philosophy as well as in morals and religion among the nations who have embraced its faith. "This is the description of Paradise, which is prepared for the pious; it is watered by rivers, its fruit is perpetual, and its shade ever green." In the later and fuller visions it is pictured as flowing with "rivers of incorruptible waters," "rivers of milk whose taste changes not," "rivers of wine pleasant to him that drinks," rivers of clarified honey," and "abundant fruit of every kind." There are "pavilions" with "couches adorned with gold and precious stones" curtained with "fine silk interwoven with gold," trees overshadowing of "dark green" and "extended shade," the "date-tree free from thorns" and the "mauz loaded with fruit from top to bottom," "palm-trees and pomegranates" and other fruits "hanging low and near at hand;" "fountains pouring forth plenty of water;" and attended by "damsels having complex-

ions like rubies and pearls, and large black eyes like pearls hidden in their shells, reposing on cushions of green and flowery carpets." Every feature pictured, and every expression in each picture, given as a type of the perfect garden by the sacred authority is purely of sensual aspect.

The true idea of a Turkish public garden is perhaps best seen in those two shaded resorts a little above Constantinople; the one on the west of the Bosphorus called the "Valley of the Sweet Waters of Europe" and the other the "Valley of the Sweet Waters of Asia;" almost as hallowed in the lays of the Irish Moore as in those of Arabian and Persian minstrels. Watered by streams from the mountains the grounds are chiefly devoted to plain green sward, shaded by large trees, beneath which on nature's carpet groups of men and women can sit or recline with unrestrained ease. Numerous kiosks, or ornamented summer-houses, stand on terraced hillocks or by the side of and projecting over rills from the main stream. The walks are few and irregular in their contour. The streams that come down through the valleys are left for the most part as nature has made them; the banks being simply cleared of undergrowth and the green sward trimmed so as to be thickened. At some points the stream is made to flow over marble beds, to fill marble basons, and to jet from marble fountains. The trees most common on the open lawns are the beech, the plane, the sycamore and willow.

Occasionally, and especially within the last century, a more artificial and European taste has displayed itself in newly planted gardens. In the early part of the eighteenth century Sultan Achmet III. employed a French gardener to adorn a portion of the Valley of the Sweet Waters of Europe; who transferred some of the features of Fontainebleau to the stream coming down through the valley. Again near the close of the eighteenth century Selim III. employed a German gardener; whose onslaught upon the old cypresses, cutting straight avenues through, soon brought a speedy end to the invasion of Dutch art. Still more, European influence has been displayed in the garden of Shoobra, the favorite residence of Muhammed Ali Pasha of Egypt from about 1820 to 1848; in which rose-beds and borders of various flowers, paths radiating in French style from a centre, a magnificent kiosk on an artificial terraced hillock, and a gorgeous fountain of Carrara marble were introduced. Turkish taste however soon calls back the grassy lawn and spreading shade-trees as the favorite feature of a public garden.

CHAPTER IV.

MODERN EUROPEAN LANDSCAPE GARDENING.

The general influence of Sculpture, Architecture and Painting to develope each other, becomes special in Landscape Gardening; the same order of advancement, the same cast of improvement being observed in these associated arts. In Italy as the early painting was a perfection of the old classic type, but afterwards became a transcript of nature in her rarest beauty, so gardening was originally modelled after the old classic standard; but became more natural and therefore more truly artistic than the ancient Roman. In France the exuberance of fancy of the operatic artists is put into positive form in the more elaborate gardens. In Holland, again, the square forms of the garden are fit counterparts of the square rooms of the low-life painters, and the heavy darkness of lowland foliage the reflection of the dark shading of the Dutch colorist. Finally in England the special advance made in Landscape Painting was a developement going hand-in-hand with the gradual growth of taste in Gardening which culminated in the Picturesque style.

Sect. 1. Italian Landscape Gardening; villa and palace gardens, as influenced by climate surface of country, and by fondness for ancient forms and architectural accessories.

The genius of Italy, balanced between reverence for the past and the spirit of true originality and love of nature, has developed two tendencies in the art of gardening. The most costly and extensive modern gardens about Rome are made to cover the sites of ancient villa enclosures, and even to be conformed to their limits; while about Naples, as at Caserta, new points of wild natural beauty have been selected for adornment, and old sites also have been made to take on new features. The controlling feature in Italian gardening, however, is its artificial rather than its natural adornment. So much is this the case that both at Rome and Naples the tourist, as well as his guides, in the absorbing interest of ancient sculptural and modern architectural adornments almost forgets the landscape which as a back-ground is the chief work of beauty.

The gardens of Italy are chiefly those of villas, or princely estates, of limited extent in the neighborhood of cities; those of country palaces allowing a wider range and greater diversity of scenery;

and Convent gardens, the counterparts of those of the Middle Ages. The natural causes influencing the features of Italian gardens are peculiarities of climate and soil. The mild summer breezes from the sea favor the culture of fruits of the middle temperate zone, such as the vine and the fig; the shade trees are of the class bearing foliage of a lighter or yellowish green; and this light foliage, receiving the soft and rich blue tints of the clear air, takes on a hue of subdued but fascinating loveliness. The chill winds that sweep in winter from the Appenines give a sere and barren aspect to the season of fallen foliage; and make the architectural features, unrelieved to any great extent by evergreens, a needed attraction during a large portion of the year. The volcanic nature of the country, with its sharp mountain ranges, its steep hill-sides and undulating plains, give a variety of surface, now covered with the richest soil, now cased in lava and scoriæ, and varied in productions. Here is seen the old forest growth of centuries, there the vineyard covered with the green of only two or three years growth; here a spot lately buried with the cinders of a recent eruption, and there again a black dark line of desert which no amount of labor can redeem from the brand stamped on it by the Creator's scourge.

As intimated, however, the architectural and sculptural accessories of an Italian garden are its predominant, indeed its absorbing characteristic. The entire area is surrounded by a high close wall of stone, quite unlike the airy hedge or picket fence; while too this wall is often capped with an ornamented parapet, and is always made an architectural rather than a landscape feature. Similar walls divide and even subdivide the extended enclosure; against and between these are arranged colonnades and summer-houses, statuary standing exposed and statues under canopied roofs like the old hero deities in their shrines. Finally, and as the chief work, is the villa mansion itself; most often in the style of architecture familiarly known in the suburbs of American cities as the Italian villa style.

The villas on the hill-sides encircling the walls of Rome of which the Albani and Borghese, the Madama and the Doria are noted examples, present the true type of the Italian Landscape Garden; while the circlet on the foot of the Appenine range, sweeping round at a distance of from twelve to fifteen miles through about a quadrant from Tivoli on the North-east to Albano on the South-east, are equally interesting as works in which nature refuses to be rivalled by the power of art. Of these richly adorned villas, twelve in the environs of Rome, and

fifteen or more in the distant circle, originated in the taste of cardinals resident at Rome after the era of revived art. These men, brought from distant portions of Europe under the sway of the Roman Church, generally gaining their position on account of superior intellectual and æsthetic culture, having no families to share the expenditure of their large pecuniary income or to inherit it if hoarded, very naturally sought in art both their own gratification and honor among their contemporaries. Introduced into the land of art, they found, as Vasari intimates, art-loving monks who were studying the science of horticulture, and the methods of improving fruits by breeding and crossing, by pruning and fertilizing; while even the Convent gardens, as that of St. Guisto at Florence, were taking on forms of arborescent grace and trellised beauty, which only needed a fitting expansion to realize the grandeur of the villa. A leader in this revived art was the Cardinal Hippolito d' Este who conceived the idea of reconstructing at Tivoli Hadrian's villa; and who from the designs of the artist Pirro Ligorio completed in 1549 the villa still bearing the name Villa d' Este.

Among the modern Italian villas which may be regarded as types of their class the following are prominent. The villa Albani, nestled under the walls of Rome, named from its originator a Cardinal of the middle of the eighteenth century, began with an effort on the part of the proprietor to provide tasteful open colonnades for the treasures of exhumed statuary which he had gathered at Rome; a collection in which Winckelmann became so able a critic. The villa Borghese, similarly located and equally rich in sculptural treasures, was designed to present in tastefully shaded grounds a complete reconstruction of ancient art in architecture; here the Egyptian with its varied types, there the Grecian with its three complete orders, and there the Roman with its expansion of form and exuberance of ornament. The Madama, more distant from the city walls and on the hill-side towards them, has as its chief distinguishing feature its terrace-garden opening down from the arcade balcony of the villa; the grand view of Rome and the Tiber's banks above and below the city being its great charm. The Doria, very extensive and including an area of four miles in circuit, is more truly a park-garden; its dark pine groves and avenues of evergreen oaks being a charm novel about Rome, and especially in keeping with the *columbaria*, or shrines for funereal urns, scattered through its wide extent along the line of the ancient Aurelian Way.

The modern villas, successors to the ancient, sweeping Southward

and Westward from ancient Tivoli, present at once the excellences and defects of Italian taste in gardening. The clipped hedges and squared fields seem hardly in keeping with the wild luxuriance of the ilex and the cypress and the rugged roughness of the uncultured head-lands, spared by the spoiling hand of doubtful art. The too apparent machinery of artificial water-works seems a child's device alongside of the grand cascades nature has caused forever to fall along the cliffs overhanging the Anio. From both the principal villas, d' Este and Braschi, the view is distant and panoramic. At Frascati, further South on the range, the fine hills commanding a view of the immense extent of the Roman Campagna have been improved for villa residences. The most noted, the villa of Aldobrandini, the counterpart of the ancient Tusculan near by, rich in natural scenery, carries back the visitor to the Roman degeneracy by the fantastic use to which its water-fall is subjected, as a power to work an immense hand organ. Still farther on in the circlet, quite to the South and some fourteen miles distant from Rome, the villas of Albano are the great summer resort of the modern as they were of the ancient Romans, mainly because of delightful and extended views of the lake close by, of the Mediterranean some fifteen miles West, and of the domain of old Latium, narrow in extent but mighty in the place it bore, stretching to the South. The vine-clad hill-sides are as luscious, if not so rich, the pine groves on the mountain peaks are as dark, if not as dense, as when Horace sang of them for Mæcenas; while the flower-beds of Genzano, the rose and the lily-buds now attractive as the supply for Christian festivals, are as sweet as when they decked the head-dress of Horace's Lydia or strewed the bier of Virgil's Daphnis; only the formal stiff outline of the beds detracting from their grace.

The palace gardens of Caserta, thirteen miles north of Naples, planted in the middle of the eighteenth century by the first of the Spanish Bourbons, present an interesting contrast to the villa gardens about Rome; and prepare the way for the transition to French Landscape Gardening. An idea of the extent of these grounds is gained when from the Casino, or the summer retreat on a fine open height towards the Southern limit the eye ranges over three miles of hill and vale, of grove and water-fall, to the palace on the north, and then stretches at least a mile Southward to the limit in that direction. On one side is an English garden, fitted up by the romantic Queen Caroline, and on the other side is a relic of the dense old forest of the Middle Ages which formed a knightly hunting ground.

Behind is a dense ilex forest still full of game of various sorts; and before, meandering for miles in extent, skirted by lawns, flower borders, groves and arbors, flows a stream brought from springs at the north through an aqueduct twenty-seven miles long, which pierces two mountains in its course, and spans valleys on arches of dizzy height; which stream is tortured into every conceivable form of fountain and cascade, and is delayed in broad basons supplied with fish of rare variety and of rich quality. The chief fountain is a truly artistic representation of Diana and her nymphs of life-size bathing, while Actæon beholding is taking the form of a stag. This most extensive and costly garden of Italy exhibits a taste more fully developed in France.

SECT. 2. FRENCH LANDSCAPE GARDENING; METROPOLITAN, SUBURBAN AND CHATEAU GARDENS; MODIFIED FROM THE ITALIAN BY A NATURALLY WOODED COUNTRY, AND BY NATIVE TASTE FOR LIVELY FORMS AND COLORS.

Landscape Gardening in France as in other countries has followed the other arts in its developement. Not until the age of Louis XIV. can gardening be said to have been an art; the French gardens preceding that era belonging to the Middle Ages. The grand scale on which the gardens of Versailles were conceived, and the skill in their general execution must be regarded as an era in the history of the art, not only in France but in Europe.

The public gardens of France are of three classes; the Metropolitan, Suburban and Chateau gardens, or parks. Of the former class the garden in the enclosure of the Luxembourg palace on the left bank of the river Seine, and the more recent and extensive garden in front of the Tuileries on the right bank, are specimens. To the Second class belong the old palace garden of St. Cloud, on the Seine near Paris and the Bois de Boulogne, a short ride also out of the city. To the third class belong the old hunting park of Compiegne, and the grand works of Versailles.

The general aspect of gardens in France is measurably controlled by the surface of the country; which is generally more gently undulating than that of Italy, allowing therefore a wider extent of complete view and greater variety of scenery. This feature the French have availed themselves of to secure the effects of the curved line in ground-plot and elevation; introducing serpentine foot-paths and winding avenues wherever the surface allows it, and also seeking the effects of contrast in rugged rockeries covered with wild vines, and

knolls tangled with the undergrowth of the native forest. This characteristic, specially alluded to as a natural feature by Rapin, an English rhymester on Gardening, who contrasts the extended, forest-clad, undulating coast of Northern France with the chalky cliffs of the English and the volcanic steeps of the Italian shore:

> "Thus Normandy extends her guards of trees,
> Against the winds that blow from British seas;
> High sylvan avenues the coast surround,
> Divide large farms and ample lordships bound."

The natural suggestion to the French landscape gardener, that he avail himself of this feature, and even create it when absent, is manifest in the laying out of the Bois de Boulogne now in progress; where not only the forest giving name to the park, which in itself has a surface slightly undulating, but also an extensive level meadow now enclosed with it, has, by ditching and mounding of the soil excavated, and by immense piles of rough rock transported from a distance, been converted into a succession of hills and vales that already smile with a beauty like to that of nature.

Another feature of French gardens seen at Versailles, is the attempt to represent fable and allegory. The taste of the French, lively even to sportiveness and gay even to absurdity, has undoubtedly gone to an extreme in gardening as in other arts; but the criticisms of Lord Kames are too sweeping, as the practice of genuine artists opposed to his view attests. The attempt to represent in clipped clumps of box animals conversing together after the manner of Æsop is absurd, since neither in form, color or expression can there be even the shadow of an approximation to reality; and the sense of the ludicrous awakened by such an attempt is too strongly mixed with the conviction of failure not to be changed to contempt for the artist. The conceit of representing jets of water spouting from the nostril of a whale, or the proboscis of an elephant, is but a copying of nature; and its issue from the trumpet of a bugler, or the bill of a goose or swan, is not a device to be condemned as unnatural, since the swollen cheek of the bugler and the stretched neck of the hissing water-fowl are in position perfectly natural, while the issue of water instead of air from their throats is a pleasing not a disagreeable surprise. When, however, as Lord Kames urges, lions and wolves rushing on their prey, and deers and lambs flying from their pursuers are breathing out water instead of air from their panting chests, there is an unpleasant feeling awakened in the beholder; probably

because the inhalation, not the exhalation as in the bugler and the swan, is the vital act most to be noted. That conceit not noticed by Lord Kames, and perhaps not seen at his day, so common in modern Paris, of urinating Cupids supplying water from a fountain to the neighboring families who come to fill their pitchers, is objectionable in its moral as well as its æsthetic expression.

The gardens of the palaces of the Luxembourg and of the Tuileries in Paris, of St. Cloud and of the Bois de Boulogne in the environs of the city, and the parks of Compiègne and of Versailles are types of French gardens. That of the Luxembourg palace is about a quarter of a mile square, level in surface and necessarily artificial and even mechanical in its entire aspect, since there is no natural feature to be worked in as a contrast to the square flower-beds and oval and serpentine box borders. The garden proper of the Tuileries is level and rectangular, admitting only a geometrical plotting since it has no natural variety; but its avenues of shade trees among which the horse-chestnut is favorite, its groves of fruit-trees including the exotic orange, its beds and borders of flowers and shrubs interspersed with statuary and fountains, make it a charming retreat. The Champs Elysées, or Elysian Fields, into which the Garden of the Tuileries opens, a strip of land about a mile and a quarter long, with its central avenue of shade trees, its side parterres of flowers and shrubs, its circus, summer houses and cafés, its circle and star-shaped radiations, and its crowning architectural ornament the "Arch of Triumph," unite some of the features of the park with those of the garden. A radiating Avenue, named after the Empress, having a hard carriage-drive, a soft bridle path and shaded foot-ways, leads to the Bois de Boulogne, an old royal forest of about two thousand acres, lying a mile distant. This expansive wood and the broad meadows stretching to the Seine beyond, have been converted into a delightful park; one of whose lakes alone is three-quarters of a mile in length. The forest, though mainly of level surface, allowed natural windings in the avenues; while the meadows, as mentioned, have been so modified in surface by the ditching and mounding of the natural soil and by rock transportation, as to give the picturesque variety of an English garden. Into the outskirts numerous varieties of hardy trees as the oak, beech and pine have been introduced, also tropical plants as the banana. The allegorical idea and operatic execution of the main rock-work, including the grotto, cascade and fountains, wrought into an extravagance of fairy-like and grotesque forms, are characteristic

of French taste; not entirely conformed to the gravity of conception belonging to a less mercurial people.

The famed St. Cloud, about five miles from Paris, for generations a favorite summer residence of the French kings, is the type of all old Chateau gardens. Situated on the sloping hill-side overlooking the Seine a fine opportunity is offered by its location for that variety which an extended view from below offers. The age and size of its trees overshadowing artificial constructions, the necessary resort to winding avenues compelled by the steepness of the hill-side and the dense and dark growth of the dells contrasted with the knolls, make it a genuine embodiment of Kames' idea of an artistic garden as "nature itself adorned."

The forest of Compiègne, about sixty miles north-east of Paris, was one of the earliest as it is the latest hunting-park of France. Here the warlike monarchs of the middle ages, nurtured by the chase introduced by William the Conqueror into England, gained that hardihood which made them noted for military prowess. Here for convenience to the royal household when visiting the town of Compiègne for hunting purposes Louis IX., called the Saint, built during the crusades the first royal residence. Here Louis XIV., the great builder, reared a costly palace which became a famous summer retreat for his enervated successors, a lodge in his oft-frequented shooting-ground for the sportsman Charles X., and a resting-place for the war-worn Napoleon; as it is now the fixed sojourn at the appointed season for the active Napoleon III. when seeking respite from executive care and for his Spanish consort fond of horsemanship and the excitement of the chase. The forest contains over thirty-six thousand acres; and the numerous roads through it measure more than six hundred miles.

The palace and park gardens of Versailles, in some respects without rival in the world, embrace a variety of features seldom brought together into one. Here, where in the dense forest eleven miles from Paris his father had a small hunting chateau, Louis XIV. determined to erect a palace and park which in extent and in richness of adornment should surpass anything in the past. Such was his success that for one hundred years the Court residence was removed from Paris, until a complete city of aristocratic residences separate from the busy haunts of working-men grew up; destined, however, to teach the lesson that, though an Asiatic may separate himself from his people as a being of a higher order, no European sovereign can with safety attempt this. The halls of the palace, now, like a chain

doubled on itself, are so many parallel ranges of picture galleries, not less than a mile in entire length. The grounds of the Palace comprise three parts; the garden proper immediately in front, the small park and the large park. At the head of the garden before the palace gushes out through different fountains and basons a small river brought from the neighborhood; whose waters flow from these basons in a central channel throughout the entire grounds. In the garden is an orangery, a conservatory of foreign plants, and tastefully formed beds and parterres of flowers and grass-sward. The small park is about twelve miles, and the large park, which contains several small villages, is about sixty miles in circuit. Numerous fountains and basons receive the waters traversing the grounds; the largest of which is that of Neptune. Around these, and forming a part of them, are the numberless allegorical figures criticised by Lord Kames; Neptune and Apollo attended by nymphs and tritons; dragons, dolphins and varied figures spouting jets of water; Latona praying to Jupiter for revenge on the peasants of Libya who denied her water when thirsty, and these peasants turning into frogs and spouting torrents of water over her. The avenues and groves of yews, willows and other shade-trees, and the numberless statues and summer-houses in the grounds are an endless source of interest for the frequent visitor.

SECT. 3. DUTCH LANDSCAPE GARDENING; CONTROLLED BY LOWLAND SCENERY; CHARACTERIZED BY STRAIGHT LINES IN ROADS AND CANALS, IN FIELD-BOUNDS, BANK-TERRACES AND SHADED AVENUES.

As the lowland scenery of the Netherlands gave form to Dutch painting, directing it to landscape of low horizon and quiet rural life, so Dutch gardening took its general characteristics from the same level scenery. Its main features, derived from the structure of the lowland country, were only partially modified by intercourse with other countries. The two peculiarities of a flat river bottom or sea-marsh country, are, first destitution of native forest trees, the meadow being more favorable to cereal and annual than to arborescent and perennial growth; and, second, a tendency to straight lines in paths, roads, avenues of trees and even in artificial watercourses, arising from the fact that naturally animals and men take the shortest course in a level country where no rising grounds or forest thickets turn them from their course. In Holland not only the streets of the chief cities, but also the high-roads and even the canals which connect distant towns and the moats which served as

ancient defences outside of city walls, were straight and unbroken; hence the line of shade-trees which taste as well as comfort demanded along their borders were planted in straight lines. The same style of division was naturally adopted in the early Dutch gardens. The trees on the lowlands were with few exceptions not a native growth, but transplants from an upland soil to which they were indigenous; and hence a fondness for exotics was early awakened. The wide commerce of the Dutch, which carried their merchants and men of adventurous ambition to the Indies and China, stimulated this native taste; and Dutch gardens became noted for exotics, especially for tuber and bulbous roots capable of long transport and furnishing nutriment of peculiar richness and flowers of rare beauty.

The public grounds of the lowland cities are chiefly wide avenues with rows of trees serving as drives and promenades; a peculiarity which the Germans have copied from the Dutch. The towns of Amsterdam and Rotterdam, named from the rivers at whose lower dams they are built, and Hamburg similarly located, have moats outside of the old walls and canals forming streets with broad walks on the sides bordered with green sward and shaded with lines of trees. At the inland town of Utrecht, and at many German towns as Frankfort, Leipsic and Vienna, the old walls of the middle ages, rendered useless as a defense by the introduction of gunpowder into modern warfare, have been removed, leaving the foundation as a broad carriage road; and this foundation, called in the French Boulevard, together with the moat and intervening bank, have been lined with avenues of trees enclosing foot-paths and carriage-drives. Through the influence of William III., whose early life gave him Dutch ideas in art, this style of gardening was introduced into England; while also the German origin and family alliance of the princes of northern Europe has caused its spread even into Russia.

In quite modern times a more comprehensive style has prevailed both in German and Russian cities. The city of Munich boasts of its magnificent park four miles long and half a mile wide, whose undulating and wooded surface has been laid out in winding drives and foot-paths, making one of the most picturesque parks on the continent. At Berlin and other Prussian towns the old gardens are still a flat surface laid out in rectangles of geometric strictness; while the newer parks are in their ground-plot conformed to natural undulations of the soil. The grand park of Tsarkoe Selo, the imperial Russian residence about two hours' ride from St. Petersburg, enclosing an area of three hundred and fifty acres, has a surface beautifully diver-

sified with hill and dale, forest and lawn; it contains besides the palace and its surroundings, a Chinese village with its pagoda, a Turkish town in miniature with kiosks and a mosque, a Grecian city with temples and statues of classic grace, and an Egyptian temple with its pyramids and obelisks; while in the mountain-sides are caves, in the forest hermitages, and on the plains monuments of civic and military glory commemorating Russian history. While thus Holland itself retains the true features of native Dutch gardening the transition to a more comprehensive style becomes gradually more manifest in the traveller's progress eastward.

SECT. 4. ENGLISH LANDSCAPE GARDENING; CHARACTERIZED SPECIALLY BY LAWNS, PARKS AND ANIMAL COLLECTIONS; IN STYLE THE EARLY ROMAN, MODIFIED BY THE ANCIENT DUTCH, AND THEN SUPERSEDED BY THREE SUCCESSIVE NATIVE SCHOOLS THE BALD OF KENT, THE PICTURESQUE OF PRICE AND THE GARDENESQUE OF REPTON.

There are marked peculiarities in the soil and climate of Great Britain, in the history and tastes of the people, which have made Landscape Gardening the art of Britain, as sculpture was of Greece, architecture of Rome and painting of Italy. The surface of Great Britain, generally undulating, varies in contour from the plains in the South of England to the highlands of Scotland; its soil, though often thin, drenched with the damp from the Gulf Stream, is everywhere covered with a coat of the darkest green; making grass-sward, hedges and every variety of trees to take on special richness and denseness of foliage. The peculiar history of the British people, subject for ages to Roman domination civil and ecclesiastical, then successively influenced by Danish, Dutch and German ascendency, and yet again half transformed by a prevailing French cast given to their laws, language, customs and tastes, has introduced various conflicting styles in all the arts. This influence has shown itself most in architecture and gardening; since the insular and independent position of the British people, the hardy and sturdy stock from which they had their origin, have made them always fond of an out-door stirring life, and their genius in art has naturally sought to add beauty and grace to the wilds of their out-door haunts.

These causes have controlled the characteristic features given to English public grounds, as well as the progress of taste in architecture. When William the Conqueror introduced the chase into England it was a successful effort to win popular favor; because the spirit of the nobles and of the people was already prepared for its

appreciation. The luxuriant grass-fields of England make the rearing of domestic animals upon the open meadows and lawns adapted to their grazing a favorite pursuit with the quiet farmer; while the hunting-park stocked with deer, and the wilds frequented by the fox, afford a manly recreation to the country gentry, and the zoological gardens enlivened by wild animals of every clime are a never ending source of delight to the populace of the great city. To the improvement of the public grounds the best intellect of England has turned its attention; able and philosophic minds have discussed different theories, and skilful gardeners have practiced different methods of promoting the advance of the art; so that the succession of schools in gardening has been in England as marked as have successive schools of painting in Italy.

The early style of Gardening was derived from the Romans, and had the peculiarities already noticed as characterizing the Roman art; a little square court-yard, with beds of cramped proportions, constituting all the garden proper. An innovation was made upon this style, long fostered and kept alive through Roman ecclesiastical influence, by Charles II.; who employed the celebrated French landscape gardener Le Notre, who laid out the grounds of Versailles for Louis XIV., to plant the Parks of St. James and of Greenwich. As a specimen of the little appreciation of the law controlling the new art, it is related that when Lord Bathurst, in directing the widening of a brook in his grounds, had ordered the workmen not to depart from the natural windings of the stream, Lord Stafford, imagining that a regard to economy had prompted the direction, innocently inquired, "What would have been the additional expense to make the banks of this piece of water straight?" The new style, thus introduced by Le Notre, suffered a reaction again under William III.; whose early life in the Netherlands, as well as his ecclesiastical leanings, led him to favor the old Roman and the Dutch styles. A striking illustration of this fact was given in the succeeding reign of Queen Anne, when upon the splendid victory of the Duke of Marlborough at Blenheim in Bavaria, the estate called from that date "Blenheim," was purchased for Marlborough by the grateful English people, and a mansion built upon it which cost £500,000; upon whose grounds the rows of shade trees were arranged in straight parallel lines, corresponding to files of soldiers drawn up in the order of Marlborough's line of battle, each row taking the name of the regiment whose position it occupied. To the end of the Stuart dynasty, foreign influence controlled; but under

the house of Brunswick, gardening became pre-eminently an English art.

In the time of George III., so entire a revolution had come over the style of gardening in England, that Sir William Chambers is said to have remarked, "If this mania be not checked, there will not be remaining three trees standing in a line throughout the kingdom." At this era, Hogarth's "Analysis of Beauty," whose main idea is that, "the curve is the line of beauty," began to have such influence as to lead to an injurious extreme. In gardening, Kent and Brown, virtually though not formally, adopted the principle that no line is beautiful except the curve. The architectural adornments of grounds, whose lines are of course in the main straight lines, were made too entirely subordinate. The mansion, plain in structure, without projecting piazzas, was situated on a rising ground; no terrace was allowed, since it would break up the rounded outline of nature; no enclosed court-yard appeared in front since this enclosure must take a rectangular shape; the natural green sward, closely cut by the scythe, extended unbroken quite up to the foundations of the building; the carriage-way wandered winding by an easy gradation up the ascent to the mansion; and trees were left standing or cut away according as they conspired to or interfered with the general design. This style was called the "Natural" by those who saw only its excellencies, since it adhered strictly to the forms Nature had beforehand prepared for the artist to adorn; it was entitled the "Bald" by those who saw also its defects, since it left the exterior of the mansion and the lawn skirting its outline entirely bare, like a bald man's hairless head. It was, doubtless, though an extreme, a real advance in art; and was the more important since it was the first truly native English style of gardening, as Hogarth's was of painting, and prepared the mind of British artists for future independence in design, which was afterwards to take on more comprehensiveness. An impulse was given to the popular taste for gardening by the fact that numerous critical writers then directed their attention to its principles; while the poets Cowper, Shenstone and Mason, the two latter of whom warmly advocated the theory of Kent, threw around the art, as Virgil had in the age of the Roman Augustus, the charm of poetic picturing.

As Hogarth's independent spirit aroused in his own day minds equally vigorous in thought, and more comprehensive in culture, so was it with Kent. The able landscape painters, called out while Hogarth was yet the leader in the English School of painting, con-

tended that gardening, the art susceptible of such perfection under the sky of Great Britain, should conform to the features of landscape painting as then practiced. The main idea had in view at this stage of progress in English art, was the attaining of contrast between the finish of the architectural features, including the portions of the landscape immediately surrounding the buildings introduced into the picture, and the untrimmed thickets and unbroken wilds presented upon its sides and in the back-ground. This style was a reaction against the extreme of that proposed by Kent; but in some respects tended to a greater extreme. It laid great stress upon richness in the architectural accessories; it urged that wild grounds be dotted with spots on which the highest culture should be lavished; while it would leave the main portion of the landscape in a state of nature more untouched than that of Kent's proposing. This style called the "Picturesque," from the relationship to Landscape Painting already mentioned, gained the favor of many men of culture from the fact that it had as its theoretic advocates the ablest of the English School of Landscape Painters, and as its practical supporters such men as Gilpin and Sir Uvedale Price. Lord Kames seems to have approved, in principle at least, the leading features of both these somewhat conflicting styles; commending in his Elements of Criticism "Kent's methods of embellishing a field * * with beautiful objects, natural and artificial, disposed as they ought to be on a canvas in painting;" while he speaks of the Chinese method of gardening, a style perfectly allied to the "Picturesque of Price, as brought to greater perfection than in any other known country of the world." The practical advance in the true science of Gardening made by Price, was seen in its influence in arresting the crusade against hoary avenues of trees, unspared by the ruthless axe simply because Kent had taught that the nurses of their youth erred in planting them in straight rows; while it awakened a theoretical study, illustrated in Lord Kames' "Gentleman Farmer," which led philosophic minds to "test proposed improvements in agriculture by rational principles." The failure of thorough analysis in Price's system was the overlooking of the fact that men never from natural suggestion are led to leave a portion of their grounds utterly untouched, while adjoining portions are subjected to the highest possible culture. It is natural for man to show a gradation of improvement instead of wide contrasts in his labors upon uncultured lands; giving more care to the clearing of certain portions, but neglecting none, and especially removing every appearance of slovenly carelessness from the edge of

an exposed thicket. It was this principle which led to a third style of native English gardening.

As in early Landscape painting, individual trees were hid in the picturing of a thicket, so in the method of planting trees only in close-set clumps and irregular thickets the form of the noblest was hidden and marred by its surroundings. As the impression made by a single human figure, a master-piece of Phidias or Apelles, is a more attractive work than a confused group, so a single noble oak standing alone on the plain, fully and evenly developed in all its parts, is an object more admired than a forest. The acknowledged head of the third stage in the developement of English gardening is Repton; whose works, presenting an extended analysis of the principles of taste entering into this art, and adding details as to the practical applications of these principles in the gardener's task, are among the ablest treatises extant. The two leading aims he would harmonize in gardening are, congruity in grouping and elegance in individual forms; his own statement of these two principles suggesting that "relative fitness" should be regarded since gardening is a useful art, and, again, "comparative proportion" since it is a fine art. The former principle is opposed to the crowding of trees in thick-set clumps; since this forbids the design of their Creator by restricting their full developement according to manifest appointment in making man their transplanter, and by hiding their complete beauty from the eye made to admire them. The second requires that single trees in their arrangement as respects each other be set at proportionate distances, regard being paid to resemblance, and contrast and gradation in form, color and size. This style introduced single shrubs as well as trees as ornaments of a grass-plot; it invited exotics to emerge in summer from the stifled heat and damp of the conservatory, and to rejoice as long as the hot months of a northern clime would allow in the open sun-light, the free air and the fresh dew and shower. This style was designated by the title "gardenesque," because, whatever it touched, it gave the character of a garden to all its parts; a small court-yard of a town residence with its narrow foot-paths, its box hedges, its well-rolled grass-plot dotted with low but thrifty shrubs, being a miniature of the broad field in front of a country mansion with its wide drives, its tall hedges, its extended lawn and its towering oaks or elms scattered over its face. The advancement of this style was greatly promoted by the progress of the kindred art of landscape painting which suggested new principles for the gardener's design, and by the yet greater progress made in the

science of Agricultural Chemistry, together with the improved methods it has suggested for the rearing of plants.

Sect. 5. American Landscape Gardening; affording a field for unlimited variety, and requiring a native though chastened taste.

Colonies have usually emulated if not rivalled their mother countries in art; since colonists are usually the more aspiring and energetic of the parent stock. This is especially observable in the arts that minister to utility as well as to beauty. Homer in Poetry, and Protogenes in Painting, were Grecian leaders; while in Architecture, Landscape Gardening and Decorative Art, Ephesus, Rhodes and Thyatira were in advance of Sicyon and Athens. America ought to equal, if not surpass in Gardening, the countries of Europe from which her people have sprung; since her artists have the combined and therefore comprehensive methods of all Europe, while the field for their art is unmarred by the error in workmanship of former generations.

Very early in the history of the American colonies, gardening, not simply for utility, but as the first of the arts for which a field and ample material was prepared, was introduced both by the French and English settlers. English taste early prevailed in Carolina and Massachusetts. In the former the system of the earlier English method has maintained its sway to modern times; the Battery of Charleston, and the public grounds of Columbia and of other towns being as marked as the wig and robe retained by the judges of their Superior Court. About Boston the modification of English improved systems are equally apparent; as may be seen in the lawn of the Lyman, the oak-groves of the Perkins and the flower and fruit-beds of the Cushing estates. From Louisiana as a centre, the French style of Louis XIV. has extended along the border of the Gulf to Florida, and up the Mississippi to Missouri; the immense box-hedges and clumps clipped into the form of vases and sofas, and also the lettered names of proprietors, being a marked indication of this influence in the towns even of Alabama and Georgia, as well as north to St. Louis.

The geological structure of the United States territory furnishes an unlimited field for the most comprehensive methods of Gardening, cut as it is by a mountain range extending along its eastern border which runs farther back from the shore in passing from Maine to Louisiana; and presenting in every Atlantic State, though farther to the West in proceeding southward, the features of three zones, the steep peaks

and the dark firs of the frigid, the undulating hills covered with the maple and apple of the higher temperate, and the level savannas adorned with the willow-oak and fig of the lower temperate regions. Being of virgin soil, untainted by rude hands, its garden-spots may be made to take any form which genius and culture may suggest. The able treatises of Kenrick in the Eastern, of Downing in the Middle, and of Kern in the Western States are indications of the amount of intelligence and native originality in taste already devoted to this art.

BOOK VII.

THE DECORATIVE ARTS; ARTIFICIAL ACCESSORIES AND ORNAMENTS OF OBJECTS IN NATURE AND OF WORKS IN ART.

The designation Decorative Arts, made up of two terms, involves two ideas. The end sought in them is "decoration;" not the forming of a principal object but the adding of some outside adornment to such an object. Though subordinate, the methods of decoration deserve the designation of "Art;" since the studied design and elaborate execution which enter into higher plastic arts characterize them.

The objects legitimate for decoration are of two main classes; beings possessed of life, and objects without life. The principal being demanding adornment is man; while also some of the lower animals employed by him require an equipment which may receive ornamentation. It is a perversion of art when lower animals, merely for ornament, and even trees and plants, are tricked with fantastic decoration. Among objects destitute of life, things formed by the Creator's hand and works executed by the skill of man, are legitimate for ornamentation. The adornment of rocks, stumps, pools and other larger works in landscape may be repeated in miniature vases of flowers, baskets of creeping vines, aquariums, etc., as a house decoration; while in man's work as distinct from the Creator's, there is a limit to the field of decoration.

As subsidiary to the higher arts the decorative arts hold important relations. They propose the execution of no entire work but only the framing of a picture or the draping of a statue, the fastening of modillions on a cornice or the affixing of a conduit to a fountain. Like sculpture and painting, decorative art ministers to pleasure not to utility; to man sculpture and painting have their germ in decorative art; and with the child and savage their maturest developement is mere decoration. A consideration, therefore, of the Fine Arts cannot be complete without a notice of the Decorative Arts.

The field covered by the decorative arts, as the plural designation intimates, is of limitless extent. As human wants seem to multiply with their supply, the cumbered lists of the thirteen following sections must fail to reach an exhaustive catalogue of the departments of this class of art. Their extent is strikingly illustrated by the amount of space given to these arts by general critics like Pliny, and by descriptive authors like Herodotus in every age and land; more than half the pages of ancient and modern tourists being filled with minute details of objects coming more or less directly within the range of the decorative arts; while the volumes devoted to the minute describing of single technical arts are numberless. The requisites in a Text Book of Art Criticism, so far as decorative arts are concerned, are limited to a concise classification of the principal wants of man which have called forth his skill in this department; including a reference to the principles of design employed in decoration; and also adding a brief history of their differing methods employed in different lands and ages as well as of the progress made in these arts by the more cultured nations of mankind.

CHAPTER I.

THE EXTENDED FIELD OF THE DECORATIVE ARTS, INDICATED BY THE NUMEROUS HUMAN WANTS TO BE SUPPLIED BY THEM; AND THEIR MULTIFORM STYLES REQUIRED BY THE VARIED MATERIAL EMPLOYED AND TASTE EXERCISED.

It is human wants that have always called out inventive skill; and as it is difficult to say that any one man has experienced all needs, so it is hazardous to attempt an exhaustive catalogue of the Decorative Arts; whose office it is to minister to the æsthetic demands always associated with human wants. The measure of success in these arts attained in different nations has depended on varied causes. Artisans may be restricted or aided by the material employed; one having soft wood which cannot preserve the nice lines of the carver, another hard flint into which he cannot cut the deep lines which give character to form, while another is furnished with shell or ivory favorable in both respects for his work. Imperfection of implements may be an obstacle; some nations knowing only stone or even bone for their edged tools, and even cultured nations of antiquity being limited to

copper or bronze, while the moderns have easily moulded iron and readily hardened steel.

Designs in decorative art have been drawn from three leading sources; living forms animal and vegetable familiar to all men; mathematical figures matured in the developement of material resources; and ideal spiritual devices and symbols the suggestion of intellectual progress. Taste has always been divided between vegetable and animal forms as designs in decoration: the ancient Peruvians and Aztecs, as Humboldt noted, using both; the Egyptians having the lotus-bud and flower and also the human face as the decorative design for the capitals of their columns; the Grecian, Corinthian and Ionic capitals being borrowed from the same two fields; while at this day critics are divided between arborescent and animal designs for special decorations. The former is strictly the direct copying of the natural use of the real plant; as Virgil illustrates in the strewing of flowers and twining of garlands on tombs and funeral monuments, and in the wreathing of circlets of palm and laurel upon helmets and on victors' brows. Very early mathematical figures composed of straight or curved lines entered into ornamentation; the Egyptians employing the rectangle and the trapezoid, the circle and the globe; the Greeks working out the beauties of the ellipse and parabola and the volute; while, in later mosaic and heraldic devices, forms became as infinite as the combinations possible with straight and curved lines, the Venetians of the middle ages never copying a single form in glass vases which they had before wrought and the iron-workers of Nuremburg never using a second time any pattern of casting for architectural ornamentation. In the third field of design, the ideal, all nations have conspired to call the artist's work a creation; since like the Great Former of all things his work takes a form existing as an original conception in his own mind of which neither the outline nor the principle can be stated beforehand nor illustrated after its maturing by comparison with other existing forms.

SECT. 1. DRESS; ITS MATERIAL AND FORM AS DEPENDENT ON NATIONAL CUSTOMS AND INDIVIDUAL TASTE; ITS ARTIFICIAL COLORING AND ELABORATION BY NEEDLE-WORK.

Form and color are the elements directing taste in dress; and preferences for one or another of these depends partly on the external provision made by the Creator in the material furnished to man's hand, and partly on habits of mind formed and fixed by national customs or individual idiosyncrasies. The work of giving form and color to

dress has from time immemorial been the recognized sphere of woman's taste and skill; Egyptian and Assyrian, Greek and barbarian, all conceding this office to be in-door female employ; while the great Teacher mentions man's sowing, reaping and gathering into barns to furnish needed food, together with woman's spinning and sewing to provide raiment to rival the lily in grace of form and richness of hue.

The first raiment was in form a short half skirt or pinafore, its color the simple green of earth's carpet; its material broad fig-leaves stitched into form. How rapidly circumstances may change the form, material and fashion of dress is indicated when immediately we read of "coats" or close-fitting tunics, of the "skins of animals" made by the Divine hand and hence retaining their color and form; this single garment being the common and sole dress of both man and woman. The earliest specimens of male and female attire presented on the monuments of Egypt, as well as present customs among all nations, show that this garment, the tunic, chemise, shirt or frock, all kindred in form, is the universal primitive dress for male and female. In later days there came to be thrown over this as a temporary covering to ward off cold or for display, the robe, mantle, shawl or cloak. The addition of the closer-fitting vest, boddice and jacket, and the trowsers or pantaloons, now prevailing, so that it is the court-dress even in Turkey, originated later in a northern clime and in the Arian or Japhetic family. The head-dress, varying from the fur skull-cap of the north to the grass broad-rim of the tropics, from the plain kerchief of the Arab maid to the gorgeous turban of the Persian grandee, and from the simple fillet or hair-band of the Grecian Phryne to the gigantic frills and ruffle of the English Elizabeth, is hardly susceptible of analysis or of historic tracing. The clothing for the foot necessarily conformed more than any part of the dress to the form of that part of the body, has varied from the mere sole, or sandal, covering the bottom of the foot to the top-boots reaching to the knees.

The material of dress, as we have seen in the two specimens provided for our first parents, was not originally a fabric wrought by human art; but coatings already formed, as vegetable tissues even of leaves and animal membranes; a material still seen in the clothing of the American Indians, of the inhabitants of the Pacific Isles and of the South of Africa, who use not only the bark and leaves of trees, and the skins of animals, but also the thin but strong membranes which line the interior cavity of the bodies of animals. At a very

early day, however, the idea of spinning the short fibre of wool and soft hair, an animal provision, then of vegetable fibre, such as linen from hemp, cotton used at a very early period as Herodotus assures us in India, and finally of silk, a prolonged thread, the product of insect formation from vegetable aliment, came to displace the simpler fabrics. The advance of the art of spinning from the simple spindle with its circular guard to the common spinning wheel and then to the most perfect spinning jenny of modern times, also the parallel advance of a weaving apparatus from the two straight beams set upon posts, between which the warp was originally stretched, up through the common hand-loom to the wondrous machinery of the modern cloth factory, are among the most interesting of studies.

As to the form of dress most appropriate, utility and taste have both had a voice; and the amount of time devoted to this subject, by at least one of the sexes in so many ages and lands, ought, it would seem, to have developed some consistent philosophy. True taste would doubtless say, 'since the human form is the most perfect work of the Creator, that is the true ideal of dress which sets off that form to the best advantage.' Utility, however, puts in her claim for a loose attire hanging distant from the person; and other demands, especially of woman's nature, have called for even widely expanded robes. In general, the former principle has been allowed control in the dress of youth; and utility has joined with taste in continuing the close fitting dress as best for men engaged in manual employ, reserving, however, for the student, the divine, the judge, or the king the flowing robe. To the demand of courtly elegance for lengthened veils and skirts that "swept the ground," Homer refers in alluding to Priam's queen and her attendant. The striking peculiarity separating Asiatic from European taste in dress, is the love for ancient forms as contrasted with the restless craving for change under the idea of reform; more marked perhaps in the decorative than in the higher arts. To this Herodotus alludes; mentioning the changing dress of the Greek women, originally the plain Dorian, then divided like the orders of columnar architecture, into Dorian, Ionian and Corinthian.

The color of dress is subordinate to material, and to form. When dress was made of naturally furnished material, vegetable and animal, the color was already fixed; as in the fur of the lion or bear. The inner side of skins however, and the inner membranes of animal forms used for clothing, has naturally been colored; as is seen in the buffalo robes of the American Indian, and in the fish-skin tunics

of the Sandwich Islanders. That this was an early suggestion is intimated in the "badger's and ram's skins dyed red" used by the Hebrews at Sinai, and by the mummy wrappings still found in Egypt. A vivid idea of the extent to which this art was carried in the early history of the Egyptian and Hebrew people, may be gained by tracing the use of the words "red, blue, scarlet, crimson, purple" in the Old Testament Scriptures. When woven fabrics came into use for clothing, dyeing became a necessity of the rudest taste; and the rich dyes constantly met in the remains of ancient Egypt, and the reiterated mention of the "Tyrian purple" and other favorite colors show how much human nature demanded in this respect. The colors first given to woven fabrics were tinctures giving the same hue to every part. Dyeing was improved, when, as Aristotle and Pliny indicate, a cloth dyed dove-color was made to take another hue, as when "purple" was added to a "dark rose;" and it reached its highest advance through modern chemistry in the colors called "changeable" and "invisible." The next stage was the interweaving of thread previously dyed of varied colors, forming a checkered work of plain square figures, the "plaid" or partitioned work of modern times; a method known in the patriarchal age, as it is now to the Arab of the Desert, since Jacob bought "a coat of many colors" for his favorite son. It was an advanced developement of taste when figures began to be wrought into the texture of the woven fabric; or when decoration in dress assumed the character of the higher arts.

This higher art, akin to drawing and painting, wrought at first by the needle, seems to have been the copying of a pattern furnished by an artist. In the scenes of Helen meeting her mother-in-law and of Andromache with Hector pictured by Homer, the high-born dames of Greece and Troy are not disgraced by familiarity with the distaff and the loom, since these are dignified by superior skill in embroidery with the needle. This needle-work alluded to by both Homer and Virgil as a Trojan, Sidonian and Carthaginian female art, was succeeded by the higher mechanical work of inwoven figures. To these Homer makes Hector allude when he dreads for Andromache the double shame of toiling as a slave at an "Argive loom" and as a captive weaving in designs of Troy's Fall. Herodotus, too, describes a corslet of Amasis king of Egypt of linen with figures of animals interwoven with gold thread. This higher art had its stages of advance, as Pliny has recorded; who mentions first the invention of spinning and weaving wool; then that in the mak-

ing of tunics from its cloth, the Phrygians invented fine needle-work, that Attalus "introduced the working of gold thread, and the Babylonians the adorning of garments with various colors;"[1] and that as the final step in the perfected art, Alexandria originated the method of weaving in bars of colored thread laid into the warp, while Gaul divided up the web into diamond-shaped checks. The gorgeous shawl weavers of modern times have of course the advantage of the skill of the past and the science of the present day.

SECT. 2. PERSONAL ORNAMENTS; THEIR CLASSES AS RINGS, BRACELETS, ANKLETS, BREAST-PINS, LOCKETS, WATCHES; THEIR MATERIAL AS SHELL, WOOD, IVORY, GOLD AND PRECIOUS STONES; AND THEIR WORKMANSHIP AS CARVED, WROUGHT, POLISHED AND ENGRAVED.

The dress of mankind is necessary as a covering, utility being its chief end; but ornament is almost universally sought as a secondary aim even by the poor in their holiday attire. Men wear but few ornaments; and these generally, as seen in the signet ring, are for some useful purpose. Among women, ornament is so completely the end that even the breast-pin and the watch designed to be useful attachments are pure superfluities. The high place in the realm of art occupied by personal ornament is seen in the fact that engraving on precious stones was in the best days of Greece and Rome reckoned with sculpture and painting; while in the whole history of art, this department of decoration has called out some of the truest genius and led it into the walks of those two highest of the arts.

The portions of the person adorned by special ornaments are four features of the head, two of the neck, two of the trunk, three of the upper and one of the lower extremities. The forehead may be decked with simple wreaths of leaves and flowers, as in childhood; with a fringe of teeth and shell and a crown of feathers wrought by savage hands; with the turban and its projecting horn worn in Western Asia; with the fillet of the Greek maiden and its droplets of jewelry; or with the Roman crown adopted by European Sovereigns. The eyes, which are beauty itself without ornamenting, the rude Arab seeks to adorn by tinging the inside of the lids with a black vegetable pigment called "kohl," used from the earliest times among them; while the eye-glasses of modern days are usually but a species of ornament. The ear, in ruder and even in refined ages, has offered its muscular pendant beneath the cartilage as an inviting point for

[1] See this mention Ezekiel xxiii. 15.

dangling ornaments; while in ages and among tribes yet ruder the wings of the nose have been deemed a fit curtain whose pierced sides should be fringed with kindred pendants. The necklace, in all ages and lands, a natural and favorite ornament, was in Egypt used in royal decoration for the suspension of a kingly signet,[1] and as a funereal bond to support the images of the gods presiding over the dead; retained still as a female ornament especially fitted for childhood, or as a support for other ornaments still common to man and woman. The breast-plate, richly illustrated in that of the Jewish high-priest, the girdle about the loins, a favorite token of exchange between Grecian and Trojan heroes, are still retained as decorative apparel. The upper arm of woman was anciently girdled with bands or bracelets, still illustrated in the military and civic mourning badge; the wrist was encircled by a plain bracelet or an ornamented band with droplets; and the fingers were heaped with a profusion of rings. An early but obsolete ornament except among savages was the anklet for bare or sandaled feet, still retained in the fringes for boot-tops; with which Eastern damsels of old "made a tinkling as they went."[2]

As material for personal ornament shell among tribes near the sea, in the interior the teeth, claws and bones of wild animals and birds, and among savages human teeth and bones have been common. The richest of calcareous material is the pearl, a coating formed by the mollusk over a grain of sharp quartz sand that by accident has been washed into the shell; the mother of pearl, so called because it is of the same material with the pearl and similarly formed; and especially the ivory tooth of the larger tenants of the dry land and of the sea, as of the elephant and whale, worthy of Solomon's throne and of Phidias' Minerva. The metals, especially silver, have been wrought into settings and embossed work, for rings and pendants. Finally the gems to be set have in all ages been stones of hard texture and rich colors, ground and polished by the lapidary, and engraved with some motto or device; or they have been the crystal diamond, cut and split in its cleavages to regular faces, reflecting in condensed and brilliant beams the light caught and caged by refraction within its mass except at the rarely presented angle where the whole focal condensation issues in one stream from the moving wearer to the eye of individual beholders. The highest triumph of ancient art was reached when Grecian engravers cut Alexander the Great's image on precious stone

[1] See Genesis. [2] See Isaiah iii. 16, 18.

in a manner to rival the chisel of Lycippus and the brush of Apelles.

Sect. 3. Implements of Business and Household Utensils; their forms and material as of wood, iron, clay, porcelain and glass.

In hours of leisure, man and woman indulge in personal ornament; but since the first man and woman were employed together in the garden of Paradise, to "dress and keep it," labor has been the constant occupation of our race; and implements for man's out-door and utensils for woman's in-door employ have been demanded. What these were in man's primitive condition, when the trees of the primitive garden were to be trimmed and raiment of leaves and of skins to be wrought, we have no means of knowing; yet implements were needed when Cain tilled the soil, and when the flesh of the slaughtered lamb was to be cooked as food. How rude and simple these may be to meet the positive necessities of human nature, may be illustrated by a glance into the male and female apartments of an Arab's tent or of an American Indian's wigwam, or by a look over an army bivouac; all the implements of the Arab's employ after thousands of years without change being the saddles and halters of his burden camels, and all the utensils of his wife her spindle, a single earthen pot, a wooden bowl and a metal plate for cooking.

The material of ordinary implements has been chiefly controlled by the use to which they are put. In the soft soil of Egypt without stones or roots, the plough has always been of wood, usually only a rough limb of a tree with a strong knot for the share; but the rocky valley of Syria and the tough grass sward of Northern Europe has always required a metal tip to the share, if not a coulter of the same hard metal. The Indian's hatchet is of the hardest flint or quartz; but civilization introduced bronze, and afterwards iron for cutting instruments. Bowls and spoons are still made of wood among rude tribes, but advancing society leads to earthen or silver. The cooking pots and pans of the Hottentot, of earthen and of coarse metal, can only be improved in form without change of material. In this respect the implements of man have changed far less than the utensils of woman's sphere. The tools of the farmer, of the carpenter working in wood, of the smith in metal, and of the potter in clay, have undergone little change in their material or even their form from the earliest times; for, since utility was their main end, it sought at first the material best fitted for its varied purposes. The utensils for the household, especially table furniture, have witnessed an effort

of art to improve in material most marked in the advance of mankind. This will be especially noted in the perfection in glass attained by the Egyptians; in porcelain, of whose manufacture the Chinese still remain unrivalled masters; and in earthenware for whose exquisiteness of finish the ancient Etruscans have been a permanent wonder to the world.

The forms of implements and utensils, originating partly with the aim to secure beauty, mark more decidedly in their changes the advance of art. The enterprising farmer, surveys with delighted eye the graceful curve of his new plough of improved pattern, and is as eloquent upon its beauty as an amateur in painting before the Transfiguration of Raphael. In hatchets, knives, reaping-hooks, and other like implements, artizans have been as ambitious for improved forms as for improved workmanship or material, though beauty alone is the aim of the former and utility of the latter attainment. In the household utensils alluded to, the table ornaments of glass, of porcelain and earthenware, the full glory of art in form has lavished itself. The exquisite curve of the Etruscan vase modelled as we have seen after the slope and bulge of the human form, the luscious thinness of the translucent Chinese porcelain cup seeming like the tender pulp of a fully ripe fruit ready to melt in the mouth, the variety of tracery in Venetian glass vessels which never allowed a repetition of the same form however graceful, these are gems of decorative art worthy to give to the artizan a place among the first of artists.

SECT. 4. HOUSE FURNITURE; ITS USES FOR CONVENIENCE AND DECORATION; ITS MATERIAL AS WOOD, IRON, MARBLE; AND ITS VARIED STYLES IN DIFFERENT AGES AND CLIMES.

During the interims of toil, man seeks rest at his home; and woman is always there even in her toil. The house must be furnished to meet man's wants; and these are varied. The hall is the repository for out-door raiment, and needs its hooks and racks; the saloon is for ordinary rest during the day, and requires convenient seats; the parlor is for the reception of special guests, and demands elegance in sofas and lounges; the dining-room is for eating, and its seats and tables must be fitted for their offices; the sleeping chamber is the place for night repose, and its beds for rest, its bureau and wardrobe for raiment, its light-stand, wash-stand, and other conveniences, are a peculiar demand. The furniture of any single mansion, though it be the humblest cottage, is a study for man's mechanical skill, and it always calls forth his taste in art.

In the rudest and earliest periods of man's history these demands were realized. In Eden the grass turf might have been a sufficient seat by day and couch by night. In Egypt's early history, however, as seen for instance in the life of Joseph, the bed-chamber was provided and the banqueting hall furnished as in later ages. In Homer we read of Agamemnon's "gilded throne," of Juno's "golden couch," of Helen's "loom" and of Hecuba's "odoriferous wardrobe." There is not an age in the chronicles of man's existence, nor a land of his abode now visited, where substantially the same wants as to household furniture are not met, and where art does not seek to give beauty to articles designed to meet this demand.

In no department more than this did Asiatic taste show its luxuriant richness. The walls of Egyptian tombs, whose sculptures and paintings were designed as pictures to enable the spirits of the dead there enclosed to dwell still amid all the provisions enjoyed by the living, indicate that Egyptian artists excelled preëminently in designs for household furniture; for, beyond all the extravagance of modern French and American taste, the unnumbered variety and unsurpassed gorgeousness of these ancient patterns is one of the richest studies the world furnishes. The records of Hebrew history, when Egyptian artists designed the furniture of Moses' tabernacle and of Solomon's palace, agree in their testimony with the Egyptian monuments. The same richness characterizes the taste of modern Asia; as seen in the gorgeous divans of a Turkish saloon. The more chastened taste of Europe is, however, as varied as the spirit of the people. The light open ozier or willow sedan and lounge of the more Southern, running into the close cloth-covered chair and sofa of Central, and the dark oak-framed hair-cloth seat of Northern Europe is the suggestion of utility; but taste determines the myriad fancies of French furniture as compared with English.

Color as well as form influences the ornamentation of furniture. The exquisitely rounded hillock, carpeted with rich green, is the beau-ideal of a primitive seat or lounge; both the form and color of the sylvan resting-place giving its charm. The Asiatics heightened the graceful curves of the arms, backs and legs of ottomans by the contrast of blue and yellow housings which cover them. The Greeks, as pictured by Homer and Virgil, seem to have borrowed their notions in this art from Asia and to have allowed the land of luxury to rule in this her appropriate sphere. The study of color as well as of form in modern furniture absorbs genius worthy of high art.

SECT. 5. WALL DECORATIONS AND ARCHITECTURAL ORNAMENT; TAPESTRIED, PANELED, FRESCOED AND PAPERED WALLS; CARVED STUCCOED AND PAINTED BORDERS; PANELED, CARVED AND CAST DOORS, WINDOW-FRAMES AND BALCONY-RAILINGS.

In architecture the decorative are brought into most intimate association with the higher arts. Beside the furniture, separate from the mansion, there are portions of the interior, which demand special adornment. The doors for entrance and exit and their border casings, the lintel above the side-posts and even the threshold, the windows with their sashes, transoms and casements designed to admit light, and the fire-place projecting from the chimney-wall with their jambs and mantle, all claim not only the negative attraction of true proportion but the added charm of artistic decoration. The cappings of the windows and the entablature of the door-porch, the border separating the ceiling from the side-walls belong to architectural design; while the carving of the door-panels and the moulding of the stucco-cornice and the ornamented centre in the ceiling are so directly connected with the first lessons in sculpture that genius for the higher art has often been brought out during apprenticeship to the lower. Still more, in the progress of architecture and sculpture, as is illustrated in the ages of Phidias and of Giotto, the blank wall itself seems to cry for the hand of art to adorn it; and the whole blank space becomes a broad tablet for the painter to whose work the cornice is but a frame setting.

The adornment given to interior walls has partaken of three characters according to the material employed for decoration. Interior partitions have naturally been constructed of two kinds of material as a ground-work; wood, and plaster made from lime. Undecorated, these are the common plain board wainscoting and the simple white-washed plaster. The first stage of adornment for the former material is the panelled wainscoting so favorite in ages past in England; and for the latter the figured and colored paper so common in modern house-building. The highest stage of decoration for a plastered wall known in ancient or modern times is fresco; already described as one of the most important and coveted fields of painting. The richest of all wall decorations are the hangings called tapestry; woven as a curtain and inwrought with scenes worthy both in design and execution of the skill of the ablest historical painter; an art so costly in its material, and in the time required and the talent demanded for its execution, that the combined patronage of all

the sovereigns of Europe can only sustain one such manufactory in the world.

The department of art here considered includes interior cornices, doors and windows with their borders, and balconies with their railings. The more common cornice is of stucco, or plaster, pressed into moulds with foliated designs; but heavy wood carving may be made to furnish a more substantial and richer ornament; or a paper border skilfully shaded may be made to give the relief of a real projection. Anciently doors were made of massive stone or of almost equally massive wood; but in modern times bronze is made to rival the old oak carvings; while no works of sculpture are more admired than bronze doors such as those of Ghiberti in the Baptistery of the Florentine Cathedral. Window-frames have usually been finished with plain rectangular mouldings cut with the plane in wood; but the more decorated styles of Gothic have demanded richly figured tracery-work in metal thrown upon the glass; while the history of the art of painting upon or rather in glass is a monument of skill in decorative art. Even balcony-railings, originally mere rods of wood or metal, passed through epochs of improving art; which became among the Romans and succeeding Saracens short stout columns as complete in all their parts as those of a portico; while in modern times, cast of iron or bronze, they present every form of design geometric and arborescent, reptiles and birds, squirrels and cherubs.

SECT. 6. TRAVELING EQUIPAGE; ITS FORMS AS BRIDLES, SADDLES, HARNESS, CARRIAGES; ITS STYLES ADAPTED TO DIFFERENT BURDEN ANIMALS AS THE HORSE, THE CAMEL, THE ELEPHANT; AND TO DIFFERENT REGIONS AS PLAINS AND DESERTS, HILLY AND MOUNTAINOUS COUNTRIES.

As a moving being, not always at home, the want of traveling equipage is peculiar to man. For this the power of living animals and mechanical force has been employed. The animals selected for this purpose have been chosen with reference to the two requisites of strength and speed; the former predominating in the ox, the camel and the elephant; the latter in the horse and the dromedary. The decorative arts have sought to provide an ornamental equipage for animals thus used; this provision being for two purposes, the guiding and controlling of the animal employed, and the comfortable carriage of the rider. The means of carriage have always been of two classes; the back of the animal, and a separate vehicle drawn after him. The former is the primitive and natural mode of conveyance; it is resorted to in movements through a new country or off high-

roads, as in war; and by force of circumstances it may be adhered to as in Western Asia where scarcely any person except superior officers are ever seen in a carriage.

The horse is the noblest and most favorite animal; and has been employed in every age and land for his strength and swiftness as well as for grace of movement and beauty of form and color. In Egypt he was trained to draft, not to the saddle; and on the Egyptian monuments he is seen constantly bound to the low open chariot used by overseers in visiting the wheat-fields and in the stern shock of war; while he is guided by a bridle and bit much like those of modern times. The Greeks early employed cavalry instead of chariots in war, and a rude style of saddle grew up so simple that the rider and horse seemed so truly one that the fable of the centaurs became rife; a fable felt to be real in the Indians of the American prairie who cling to their horse and guide him at will without saddle or bridle. Among the Persians the trappings of the horse, the housings of the saddles and their heavy stirrups, the breast-plates martingale and tasselled head-stall, became excessive in profusion. In the progress of art the form of the saddle, substantially the same, has greatly varied in the prominence of its pommels, from the high rim of the Mexican which makes the seat secure and easy as a cradle, to the low front of the English saddle which gives to the inexperienced rider the sensation of insecurity. In the vehicles drawn by horses the changes wrought by time are more marked. This is especially impressed on the traveler as he tracks the narrow ruts in the streets of the old city of Pompeii, or marks them on the old Roman road, in Syria, as he stands beside the relics of Roman chariots still preserved in the museums of Naples, or scans the bas-reliefs on the walls of the Parthenon or the sculptures in the Egyptian tombs. Those narrow, low, jolting cars, scarcely larger than the child's wagon, on which the ancient warrior stood unsupported as his horses, sometimes four abreast, dashed furiously to the fight, seem to have belonged to another race of beings than those who now loll in easy chariots, in wide barouches and in long and lumbering stage-coaches.

Scarcely any other animal of speed than the horse has ever been trained to draft. The camel with his plain, strong wooden saddle, guided by a slender halter, never was made to go on roads cut in soft soil but, as the entire absence of representations of him on the monuments of Egypt indicate, he belongs only to the sandy desert, up to whose limits he comes like a ship to the shore to receive his lading,

and then to bear it for weeks over the ocean of sand. He has seldom been harnessed for draft; but from the earliest ages his neck has been decked with costly ornaments.[1] The elephant, often employed in southern India for the transportation of timber and other bulky material, without trappings and guided by his keeper's stick, is sometimes also richly caparisoned, bearing on his back a howdah capable of carrying several persons; while his breast, short neck and vast ears are tricked with ribbons and gewgaws. The little donkey, hardy and easily supported on the coarsest food, the poor man's treasure in Egypt and Syria, the mule, a pack animal hardy and strong under the saddle or for draft, and the lama, a species of camel formed for the mountain regions of South America, all humble in their sphere, are little subject to decoration; though David's mule bore Solomon at his coronation, and an ass' colt, decked by the people, carried the King of kings as he rode into the city of Jerusalem. The varying forms of traveling equipage, seen amid mountains and plains on different continents, everywhere showing skill in design, are a theme of interesting study to the observing tourist.

Sect. 7. Book Illustrations; designed to meet an intellectual want; illuminated and ornamental letters to adorn, and engraved pictures to explain the text.

The wants heretofore considered as met by decorative art, are those of the physical rather than of the intellectual nature. The written page of the manuscript and the printed page of the book feed the mind with thought; sentiment being commended by the charms of the most spiritual of the fine arts, Poetry, which includes rhetoric and oratoric expression. This appeal directly to the mind, art has sought to aid by pictures speaking to the eye.

Rude savages without an alphabet, have sought to address the absent ear through the eye, by rude pictures representing only things and symbols of things, but not ideas or connections of thought. After the maturing of written language, artifice, as among the Egyptian priests, suggested the hiding of their esoteric doctrines under the veil of mystery which always has a charm for the educated, and exerts a power with the ignorant; and picture-writing, in characters called hieroglyphics, or sacred carvings, were invented. These pictures, works in themselves of decorative art, belonged to three classes so far as signification was concerned; one strictly pictorial, a cres-

[1] Judg. viii. 21, 26.

cent, for example, representing the object itself, the moon; another symbolic, a crescent, or new moon, suggesting the idea of a month; and a third phonetic, or alphabetic, necessarily used in presenting proper names, consisting of a group of objects clustered in an oval, whose first letters combined in their order spelled the proper name. It was quite a distinct idea, however in decorative art when to indicate more vividly the transition of chapters or paragraphs the initial letters were enlarged in size, elaborated in form and decorated with striking colors.

The art of decorated lettering is really seen on the monuments of Egypt, in the hieroglyphic tablets; though more fully exhibited on the papyrus rolls written in the ancient Coptic tongue, whose existence must have preceded that of the picture-writing, one of whose principles presupposed an alphabetic system. In the innumerable hieroglyphic inscriptions on the walls of temples and of other monuments, paragraphs commence with greatly enlarged bas-reliefs of a seated deity or king; behind whose chair in miniature figures extend several lines filling up the space occupied by the height of the chief figure. The early Greeks and Romans had a similar method of decorating manuscripts; the art however declining when the fine arts attained perfection. In the Middle Ages, this method of book decoration attained the highest repute. The volumes most numerously copied, in the hands of every ecclesiastic and of the people who could afford the purchase, were the liturgies; or small volumes containing the prayers, anthems and Scripture readings of the church service. These liturgies differed in the Eastern or Greek, and the Western or Latin church; they were modified in different portions of the former church, as in the Jerusalem, Alexandrian and Constantinopolitan liturgies, and in different ages of the latter or Roman Church, as in the Gregorian and Ambrosian liturgies; but in both, though somewhat influenced by the different styles of painting practiced by the Byzantine and Italian artists the methods of decoration were much the same. The object sought in these decorations was indicated in the designation "limning," from *lumino*, to illuminate. The works thus illuminated, including the "liturgies" or public service of the Christian church, and the "Breviaries" or brief prayers for private daily devotion, gave to this art the title of *missal* painting; a name derived as is the term *mass*, from the *missa* or remission of religious duty following and dependent on the performance of the regular service. From the more common color, a crimson red, employed in this decoration, the work itself was

called "rubric;" and from the *minium,* or red lead used as the coloring material, the art became the germ of *miniature* painting; the execution of ideal heads in red color passing into the painting of portraits in vignette style with a very ruddy flesh tint.

The art was kept alive after the Middle Ages; passing into the hands of Protestants, and appearing in the liturgies of the German and English Churches. In the early history, it was preserved in form, though it could not be in color; the early printed volumes issued from German and English presses employing enlarged and decorated initial type, in form like the letters before executed with the pen and brush. Occasional essays for its revival have been made; especially in those branches of the Anglican and American Churches which favor a return to ancient rituals.

In modern times, however, the art of engraving, reckoned among the Fine, rather than the Decorative Arts, has more than filled the place of the ancient limning. The tendency, perhaps, not only in light popular literature but in text-books of solid science, is to dilute the aliment and enervate the power of mental digestion, by shutting out all independent thought in the profusion of pictured illustration. The eye must be allowed to instruct the mind; but not to fascinate it from the path of independent conception, which even the young student of art, much more of science, must learn to construct without any image as a model to mar the mind's work by the eye's interference.

SECT. 8. BORDERS AND PICTURE-FRAMES; DESIGNED TO SUPPLY AN ÆSTHETIC WANT; GILT, INLAID, CARVED AND STUCCOED FRAMES FOR EASEL PIECES; STUCCOED, CARVED AND PAINTED PEDESTALS AND NICHE-BORDERS FOR STATUARY.

The æsthetic, distinct from the purely intellectual wants of man's nature, met in advanced society in a great measure by painting and sculpture, call for the aid of decoration to add their finish to the works of those higher arts. The ragged edged canvas as it comes from the painter's easel, would lose much of its beauty from its want of finish; and some kind of border must be added to hem it round, otherwise it lacks completeness. The statue standing on the ground, with no base to give it sensible support, has an air of forced constraint about it; for as a living form of man or woman has an air of ease and grace standing temporarily upon a level spot and must be elevated on a platform to retain that aspect for a protracted time, so a statue, fixed in attitude, requires a base which shall seem a part of

itself and a broad and sure support in order to present the full impression requisite to grace.

Design in decorative art seeks for appropriate and pleasing styles for borders and picture-frames, for pedestals and other supports. The leading idea in a picture-frame, is that it be cut with a deep slope inward, so as to seem to be a retreating passage-window or door-way opening outward, through which as in prolonged perspective the retreating view presented by the picture is seen. The form in outline of the frame and of the picture it encloses, must vary with the subject; while the color must be lighter or darker according to the depth of the border and retreat of the indicated aperture through which in perspective the picture is to be viewed, and the hue must be graver or gayer to suit the tone of the general design. The ancient altar pieces were executed in the niches or compartments fitted for them, having the oblong shape of a window or door-way, with an arched or scrolled top; and for single figures, taken at full length, such is the natural form fixed for all time. For rural landscape the rectangle formed when a window is half opened in viewing the natural landscape, has always been preferred; while for portrait the oval, which cuts off the useless corners and saves the artist unneeded toil, seems in every respect appropriate.

While the inner rim of the frame should be plain and sloping so as to indicate a passage in perspective, the exterior border may be cut in geometric convolutions or arborescent wreaths. The artificial garlands and chaplets wreathed about pictures in Churches at religious festivals may have suggested by their leaves, flowers and fruits their permanent copying by the artist. The favorite modern domestic manufacture of picture-frames embossed with split pine-cones, or plant-products of durable texture and color, is certainly the revival of a primitive and natural idea. The simplest and cheapest artificial material for the copying of such embossed work is a stucco of plaster easily wrought and sufficiently durable; a kind of work naturally overlaid with gilding, whose reflected light gives a richness to the coloring of the picture, making the gilt frame the preferred one for ordinary painting. The wood of the frame plainly cut may be painted black or gilded; or richest of all the noble oak may be carved in deeply embossed figures. The frescoes upon walls and ceilings may have a border without real depth; shaded however by the brush so as to represent the picture in a deep recess between the columns of an open corridor, or through the airy top of an uncovered dome. The skill of a true artist is called forth in the adaptation of

frames for easel pieces ranged in a gallery as to shape, color and depth of border. This skill is especially requisite in mounting pictures of large size arranged for public exhibition; not only that the light may strike the picture with sufficient force and at the right angle, but also that the slope of the border and its hue, whether it be of wood or cloth, be adjusted to the general tone of the painting and to the amount and direction of the light falling on it.

It has already been observed under Sculpture that the height and breadth, as well as general form of a pedestal, should be carefully adjusted both to the size and posture of a statue, and to the main point of view from which it is to be regarded. Thus a statuette should stand on a mantle or a bracket, and its foot may be small and oval, of like material and attached to it as a part of one work; a life-size statue may have the pedestal of the same material, but it should in general be rectangular, larger and more elevated proportionally than that of the statuette, and its block plainly separated from the figure; while the colossal figure should have a pedestal of dimensions vastly more exaggerated and of material in marked contrast as to material and texture with the statue. The position of statues, as in those ornamenting a cathedral, may vary not simply on account of their size and general character but also with the part of the building they are made to occupy. Thus the statues tipping the pinnacles of a Gothic Cathedral stand out against the blue sky, and have a sufficient relief. Hence again, statues perched on the cornice, either on the interior coping or at the base of the exterior tympanum, though the color of the wall behind them be that of the statue, are thrown into relief by the dark shade cast by the projection of the cornice; and statues in niches upon the exterior, where light and shade are in marked contrast, may be adequately relieved by the same deep shade behind. In the interior, however, where one common half-shade with no strong light prevails, especially if to be seen on a level with the beholder, statues require some color laid upon the recess to give added shade and greater contrast of lights. The hue selected for the simple effect of relief should be the strongest contrast; harmony requiring a complementary color when the statue is of colored material; but in general, as the Greeks recognized, an azure back-ground gives more nearly the relief of the atmosphere. Decorative art may show its skill in arching the niche so as to be in harmony both with the building and the statue. It may also add to the rim of the niche a projecting border; on the exterior throwing forward a projecting canopy over it in keeping with the style of

architecture whether Grecian or Gothic; and in the interior accomplishing the same projection by light and shade in a frescoed border.

SECT. 9. INSIGNIA OF PERSONAL RANK AND OF NATIONALITY, TO MEET A CIVIL WANT; AS CROWNS, CHAPLETS, STARS, ROSETTES, BATONS, THE EMBLEMS OF PERSONAL RANK; AND STANDARDS, BANNERS AND FLAGS THE SYMBOLS OF NATIONALITY.

As a social being man has wants of his nature aside from those belonging to him as an individual; and it is one of the offices of decorative art to meet these social cravings. In their relations to each other in civil society officers of government are distinguished in their position from their fellows; and human nature suggests that some badge of office be provided which shall make this distinction palpable to the eye. The parts of the person selected as by common consent to bear these emblems of authority, are the forehead, the left breast and the hand; the recognized seats of intelligence, of affection and of power. The rudest and most refined ages and nations have shown a marked accordance in their selections of emblems appropriate for each of these suggestive badges.

The first token of civil power is the sceptre; apparently an Asiatic emblem of authority introduced from the East into Greece and thence permanently retained in Europe. The Hebrew rulers, before their kings, carried the sceptre, though no mention is made of the crown; Moses, Aaron and each of the Hebrew princes bearing a rod as a mark of authority. In Homer the sceptre is represented as borne by all the chiefs; Agamemnon quietly leaning on his as the index of superior rule; Achilles referring to his own, which was of carved wood studded with gold, as the symbol of a divine commission to enforce law; while Ulysses lays his heavily on the back of seditious Thersites in token of power to inflict the penalty of broken law. At a very early period the sceptre, as an emblem of civil office, was distinguished from the *kērukeion* or *caduceus* borne by heralds and ambassadors of peace, and as such attributed to Mercury distinct from his magic wand; while also it was unlike to the *skytalē* of the Spartan general, a cylindrical baton rolled with paper, on which his dispatches as commanding officer were written. In later Christian ages the ecclesiastical ruler bore the crosier; a long rod or sceptre, with the hook of a shepherd's staff or a crucifix at its apex, indicative of the pastoral authority of an under-shepherd over Christ's flock. In time the sceptre became the permanent emblem of civil rule, and the baton of military leadership; the great Marshals

of Europe wearing no arms even in the field, but bearing the plain rod as the mark of their authority. The extravagant burlesque of this symbolic idea is seen in the fearfully tall horse-hair tufted poles now borne aloft before officials in Eastern Asia.

The second badge of rank seems to have been the crown. We read of it in the age of royal rule among the Hebrews as worn by David and his successors. In the ancient nations it seems however to have been preceded by the high cap of the Egyptian priests and kings; which had a tall front leaning forward, arched downward behind, so that the back elevation was only half that of the front. This again seems to have been copied in the mitre of the Hebrew high-priest; on whose front was a gold plate inscribed "Holiness unto the Lord." The famed Persian tiara, now seen on Assyrian monuments as it was described by Xenophon, a lofty conical cap, sometimes tipped with ostrich feathers, still presenting its essential feature among the Persians now met at Constantinople, furnished the type of the crown of modern times in the *diadem*, or encircling band bound about this high cap as the emblem of regal dignity, and worn by Persian kings on State occasions. To this encircling diadem has been added by Saracenic rulers, the emblem of the crescent the significant symbol of Muhammedan sway; which, like the new moon, must wax but cannot wane, till it fills its round orb. Among the Greeks it is recognized in the chaplets of laurel and oak wreathed about the brow of victors in the games. In modern Europe it became a circling band of silver or gold with an embattlement of points or stars, and settings of diamonds or other brilliants. In the days when feudal lordship triumphed over monarchy, small circlets taking the title of "coronets" or little crowns, became the recognized emblem of baronial dignity. In the days of the Papal supremacy the high cap, or tiara, already worn by superior ecclesiastical authorities, assumed the form of a triple crown, having a lofty front and back curving upward in a Gothic arch, with a central mound surmounted by a gilded cross. The first circlet of brilliants at the base of the cap was added by Nicholas I., about A. D. 860, as the emblem of civil power then established as belonging to the Holy Father; the second circlet set within the first and rising above it was added by Boniface VIII., about A. D. 1205, to represent the claim to ecclesiastical sway always maintained, as united with that of civil dominion; while the third was added by Urban V., about A. D. 1365, to indicate the third and complementary power of the Head of the Church, that of judicial supremacy.

The third badge of civil authority, that of a star or rosette on the

breast, is of later origin and of less traceable history. In the *tessera hospitalis*, the signet stone of hospitality, carried in the bosom among Greeks and Romans, there may be a slight, but there is only a slight resemblance to this badge; for that seemed to speak of a tie of affection rather than of intellectual or social superiority. It is more clearly indicated in the "*latus clavus*" worn by Romans of consular, senatorial or equestrian rank; which Horace says, the wearer "*demisit pectore*" suspended from his breast, and to which he seems to allude in the "*purpureus pannus*" sewed in a conspicuous place on the front of the toga, *pannus* being the original of the word "banner." In the Middle Ages, this princely badge was fully inaugurated; the orders of knighthood and the "tokens" of the days of chivalry, being in the form of a circlet, whose centre was a geometrically formed star, or a floral rose-shaped relief; whence the badge itself was called either a star or a rosette. It is a singular illustration of the change of customs wrought by the progress of ideas, that the Sultan of Turkey, the representative of the proudest sovereignty of Europe and of Asia, clothed in a close-fitting single-breasted frock-coat of blue broad-cloth and with loose pantaloons of the same, is distinguished in nothing from his officers around, bearing as he does no sceptre and wearing no crown, but by the brilliants set in the small rosette on his left breast.

While individual nations have their civil heads distinguished by their appropriate emblems of personal rank, different tribes and nations have their separate standards, civil or military. These symbols are of different classes in respect both to their office and form; both in the idea they suggest, and in their mode of conveying that idea. A standard, as its name implies, is a fixed elevated symbol, national or general in its character, a rallying centre seen from afar by an entire army or idolized by a great people; while an ensign, the *insigne* of the Romans, having as its plural *insignia*, is a party badge, the signal of a corps, division, brigade, regiment or company, special in its character, and varied to give each division or subdivision of an army or state its own particular symbol. A banner is properly a square or rectangular field, spread, fixed on a staff and bearing a device and motto which may be read on its open face; and it is the rallying point of an association, clan or feud. A flag is, as its name implies, a drooping pendant floating and curling in the breeze; and it may be either the standard of a nation or the ensign of a party; either the pennant of a particular vessel streaming from the fore or main-top, or the national standard floating over the quarter-deck.

The familiar term "colors" is applied to either a national standard or associational ensign, because, in order to be conspicuous, a banner or flag must be of colors strongly contrasted not only with each other, but with the air and earth on which they are to be seen as a back-ground; the red, white and blue, for instance, of the American flag being in special contrast with each other, and also with the sober and sombre hues of earth and sky.

The standards of the Egyptians, numerously represented on the monuments, were generally fan or feather-shaped; sometimes a single plume, sometimes two curved at the top outwards, sometimes a half-circle, and forming the modern Asiatic emblem of royalty; while also animal forms, as quadrupeds, birds, reptiles and even insects often furnished devices. The ancient Hebrews had both tribal standards and family ensigns; every man in their march, being required to "pitch by his own standard with the ensign of his father's house;"[1] but their confederation, consisting of nine whole and four half-tribes, had no common national rallying symbol except the ark of the covenant, over which as a central standard, seen far over plain and hill-country, rose the celestial ensign, which was "cloud by day and fire by night." The form of the Hebrew standards is unknown, except a rectangular tablet fixed on a pole, the sculpture of which is preserved in a bas-relief on the Arch of Titus at Rome, representing the spoils of the Hebrew Capitol, brought by Titus to the Imperial City. Xenophon mentions that the eagle with expanded wings, and gilded, was the royal standard of the earlier days in Persia; and Florus records, that in their war with the Romans, the Persians bore gilt standard-poles with flags or streamers of richly-colored silk. Of Grecian standards we have slight mention; Thucydides and C. Nepos but alluding to the signal raised for the beginning of land and sea battles; which we learn was, sometimes at least, a scarlet flag.

The Romans, a most thoroughly organized military nation, with every appointment connected with a government of force admirably studied, had a succession of symbols, interesting both in their history and practical value. In the rude origin of the Roman power, the only national standard was a wisp of straw tied to the shaft of a spear. Next, as Pliny records, animal forms became standard-symbols; among which he enumerates five, the eagle, the wolf, the minotaur half-man and half-bull, the horse and the boar; the former under the consul Marius about B. C. 104, becoming the sole recognized symbol.

[1] Numbers ii. 2.

This eagle, however, was only a tip to the standard pole; so small that as Florus records a standard-bearer when in danger of having his ensign taken, wrenched the eagle from its place and concealed it under his clothing; beneath which was the banner proper, on a rectangular tablet. This banner under the Republic was inscribed with the initials "S. P. Q. R.," *Senatus Populus Que Romanus;* but during the empire it bore the head of the Emperor impressed as on the coin, together with his name or that of a military leader. Under the emperors, the sculptured eagle was borne at the head of a legion as the general standard; while a dragon painted on cloth was the division banner of cohorts. The subdivisions of cohorts, as centuries or companies of one hundred men, were designated as in modern times by some peculiarity of form or color in helmet and shield. Other devices were afterwards introduced as standard symbols; among others the globe as an emblem of universal dominion: while the *vexillum*, or swallow-tailed flag was permanently adopted as a cavalry ensign. On the Arch of Constantine, erected about the time when the Old Roman Empire began to assume a new and Christian character, a large number of these Roman designs are preserved in bas-reliefs.

The ground-work of the Roman standard needed no changes when under Constantine, the civil powers took on an ecclesiastical cast. The eagle remained; assuming, at what era is not distinctly determined, the double head still preserved in the Russian and Austrian coat of arms. The cross formed by the pole and banner-rod, was fitted as by anticipation for the new faith, while the banner itself bore now on its face a cross inscribed in the Greek *ĕn toutō nika*, and in the Latin "*In hoc signo vinces.*" In the middle ages the influence of the feudal system in multiplying military and civil chiefs, and the hiding of individual features by closed helmets made the distinctive badges of heraldry called "coats of arms" to be a most extended study; and these armorial devices with their mottoes inscribed on banners became the ensigns of families without limit of number and variety of style. In later periods of the history of Europe and of the world, perhaps through the greatly extended commerce of modern days, national standards have become almost exclusively confined to flags; whose form and color floating in the air are seen at a great distance on the sea; while, though in an army on the land less favorable than a banner when there is no breeze to stir the drooping folds, they are ornaments of intrinsic grace as they catch on their elevated pole the upper breezes.

Sect. 10. Armor and Weapons of War; designed for defense, as helmets, shields, coats of mail, greaves and buskins; and for offense, as swords, spears, battle clubs and axes, bows and fire-arms.

The insignia of personal rank and of nationality are associated with the weapons of war; which, because of human depravity, man in civil society, is called to wage. Though rude in the early times, yet, so intently do men study and copy each other's improvements in arms, from the earliest ages of human developement the classes and character of weapons have been much the same until the introduction of fire-arms and gunpowder.

Arms for war have been of two general classes; weapons of defense and of offense. Men seek, first, protection from bad men; and the provisions for this defense are suggested by the parts of the body to be defended. These parts are three; the head protected by the helmet, casque or cap; the body guarded by the coat of mail, cuirass or corselet; the lower limbs sheathed in greaves for the legs, and sandals, shoes, buskins or boots for the feet; to which has always been added the larger and moveable shield used as an advanced guard to ward off a missile aimed at any portion of the body. Weapons of offense are divided according to the mode of their use, the distance at which they are used, and the manner in which they produce their effect. The simplest are those designed to bruise and crush; as the club used in hand-combat, the whirling mace or slung-shot at arm-length, and the sling-stone at a distance. Others are for thrusting, requiring a sharpened point, more or less carefully prepared; as the knife, the spear, the dagger and the bayonet to be used close at hand, the lance to be hurled, and the arrow to be shot; and yet others are designed to cut, and must be furnished with a blade short as in the axe or long as in the sword. Each of these may have an office so permanent that it is retained in all ages, and so varied in adaptation that it takes form according to the circumstances of its use; as the spear which was wielded by the earliest roving tribes of Asia and is borne by lancers of modern times, and which the savage and civilized man adapts in form to the piercing of a fish or of a human foe.

SECT. 11. RELIGIOUS VESSELS AND SYMBOLS; INSTRUMENTS AND UTENSILS FOR SACRIFICES AND OFFERINGS, AS ALTARS, CENSERS, TRIPODS; ORNAMENTED APPLIANCES FOR SPIRITUAL WORSHIP, AS CHOIR AND PULPIT DECORATIONS, CANDELABRAS AND BOOK-STANDS, FONTS, BOWLS, CHALICES, PLATES AND CUPS.

The elementary ideas suggested by man's religious nature, as well as by Revelation, forming the foundation of religious duty because of his religious need, are two; that of sacrifices and offerings in expiation of past transgression, and that of renovation securing freedom from transgression in the future. These two ideas manifest themselves in religious acts calling for sacred vessels, and in religious confessions embodying themselves in sacred symbols.

Even the nations that without revelation have recognized a spiritual Deity, and have sought to worship him without images, like the American Indians, have some rude symbols and ceremonials of their faith. The Hebrews had no image of Deity, but multiform ceremonials; the altar for animal sacrifices, the table for vegetable offerings and the censer for spicy incense; also the font and vases for purification, and the ark for the deposit of their sacred books and other relics. Even the Muhammedan, most opposed to all sculptured religious devices, has mosques and minarets rich in decorations, lustral basins elaborately embossed, and the symbol of the golden crescent speaking of his waxing religious power everywhere displayed.

The Christian Faith has been more imperative than any other in its demands on Decorative Art. In its more formal ages the Church has added to the symbols of the Hebrew dispensation, united with many of Grecian and Roman philosophy, others peculiar to spiritual Christianity. Among the latter are the decorations of the house of worship; candelabras for light, the pulpit for the minister, book-stands for the choir, and furnished pews for the auditory; fonts and bowls for baptism, and plates, ewers and chalices for the sacred Supper. No department of art has furnished a wider field for the genius of design and constructive art than the furniture and the symbolism appropriate to Christian worship

SECT. 12. FESTAL AND STAGE DECORATIONS; FLORAL DESIGNS, AS WREATHS, GARLANDS AND HANGINGS; ARCHITECTURAL DESIGNS, AS GEOMETRIC AND ARBORESCENT ARCHES AND CANOPIES.

Man was made to need hours of recreation as well as of toil for the supply of his material, intellectual, civil and religious wants. Festal occasions connected ever with religion, intellectual pastimes,

social amusements and sports have been his resort for mental and physical recreation in every stage of human progress. Æsthetic demands have sought to add the charm of art to festal occasions.

In its extreme this demand for recreation has led to the nightly tax on human nature of the theatre and ball-room. In its more legitimate action it originated the three Hebrew yearly festivals, the annual games of the Greeks and the May-day and Christmas festivities of modern Europe. Not only social but religious claims will doubtless make these a permanent though refining source of æsthetic culture.

Festal and stage decorations have taken two forms according to two natural temperaments and casts of mind among men, and to two stages of culture in the history of nations; the floral and architectural types. The floral, taking its cast from plant developement, all of whose structure is seen upon the outside, is the exuberant, untutored out-showing of exhilaration witnessed among the common people; delighting in arborescent canopies, in wreaths and garlands for personal decoration, and permanently living among the peasantry of every age and nation. The architectural is the studied and rounded embodiment of animal developement; whose structure is cloaked and casketed so as to be hidden from view; seeking the measured and polished character of city-life, and witnessed in the elaborate precision of decorated halls where courtly refinement resides. Both these styles united, seized by the hand of true genius, may become masterly in decorative art. The latter, scientific in principle and geometric in its practical adaptation, should always be the foundation of the former; as the arborescent and floral decorations of the Gothic never reach their climax of free and jubilant ornamentation except when grounded upon the frame-work that formed the triangular pediment of Grecian and the circular arch of Roman architecture.

SECT. 13. FUNEREAL TABLETS AND MONUMENTS; SLABS, COLUMNS, URNS, STATUES AND SARCOPHAGI, AS SINGLE WORKS; AND MAUSOLEA, TOMBS AND CEMETERIES AS COLLECTED MEMORIALS.

There is an end to human life with all its employment and enjoyment; and, to its claims upon art, every man looking forward to his own decease, and responsible for the last tributes of respect to those related to him, gives special heed. To funeral monuments the rudest of men cheerfully devote their grateful contributions; scarcely realizing the tax levied upon all as a debt due to their citizenship in the realm of Him who "made all things beautiful" as well as "good."

The earliest records of history show that the rearing of funereal monuments is a natural suggestion of human nature; Abraham and the Egyptians burying in decorated tombs, and Jacob rearing a pillar at Rachel's grave, who was interred in the open field. The simplest mark of the spot where loved ones lie is a slab laid upon the grave; seen still in the Arabian desert among the primitive descendants of Ishmael, and around Hebron and Jerusalem where repose the ancient children of Isaac. The first stage of progress seems to be a column or head-stone reared upon the grave. These columns becoming more elaborate passed into statues of the dead, standing in niches of a temple front or under a rotunda as a shrine. When burning of the dead prevailed, urns or vases were introduced to hold the ashes of the deceased.

While graves excavated in the ground seemed a natural means of fulfilling the divine prediction "Dust thou art and unto dust shalt thou return," the philosophy that early associated the preservation of the body with the spirit's welfare led to the construction of tombs where the body might be preserved. This led to the origin of sarcophagi or coffins to encase the body, and of tombs below ground and mausolea above ground. Among the Egyptians the sarcophagus was either of linen saturated with bitumen, pressed into the form of the human frame, then coated with plaster and richly painted with varied devices; of wood carved into a statue-like form and then painted; or of granite cut into the form of an ark or chest: and these were ranged, standing upon their feet, along the sides of their dry rock-hewn tombs. The sentiment of Abraham was conformed to that of the Egyptian cave-tomb; and among the Greeks and Romans too the idea of tombs above ground, and suggested in the pyramid, prevailed. The barrows or rude mounds of the heroes that fell near to Troy, repeated through Asia even round to the American continent, consisting of a small stone-arched chamber covered with an immense pile of earth and having their highest type in the pyramid all of stone, seem to be the germ of the grander architectural mausoleum. The name *mausoleum* is said to have been derived from the costly monument, one of the seven wonders of the world, reared by Artemesia over her husband Mausolus, king of Caria, who died B. C. 353; whose affection led her to drink his ashes, then to rear a pyramidal structure with magnificent Grecian porticoes at the base, surmounted by a four-horse chariot, the work of four celebrated artists one of whom was Scopas, at an expense so immense that the philosopher Anaxagoras exclaimed when he saw it "how much gold converted

into stone." The comprehensive influence of Christianity is seen in this department of art, universally patronized, by its adoption and refinement of every species of funereal monument. Its spiritual character, appealing to thought and sentiment, is especially seen in its tablets recording memories of the deceased and inscribing words of religious devotion.

CHAPTER II.

ASIATIC DECORATIVE ART; RUDIMENTARY IN STYLE, DEFECTIVE IN FORM, EXCESSIVE IN ORNAMENT, BUT ELABORATE IN FINISH.

In the history of art, both intelligence in design and skill in execution are to be regarded. In Decorative Art, Asiatics fall behind Europeans in conceptions of style, form and color; while they are superior in the patient labor of the hand. In style the excess of weight or slenderness seen in their architecture, in form the livelessness of their wooden idols, and in color the gaudiness of their painted portraits characterizes their decorative art. In skilful manipulation, however, of material, as in Egyptian glass and Chinese porcelain, and in labored polish, as on Egyptian granite and Persian papier-machè, the most elaborate European workmanship is far behind the Asiatic of three thousand years ago.

SECT. 1. EGYPTIAN DECORATIVE ART; THE BEST KNOWN ASIATIC TYPE.

Though the most ancient, the remains of Egyptian art are the best preserved specimen of the Asiatic; caused in architecture and sculpture by the massiveness and durability of their material, in painting and decoration by the nice enclosure of their hidden tombs, and in all arts by the dryness of the climate. At the same time the location of Egypt on the highway between Europe and Asia has made it to be constantly visited and its works studied.

The style of Egyptian design in decoration is well illustrated in their sacred symbols and utensils. The common emblem of the globe with wings, is really the beetle holding its ball filled with its eggs, indicating apparently the Creator of the fruitful earth, on whose infant-born creatures the Spirit of evil, symbolized by two asp-heads, is waiting to prey. The sacred vases of fruit and water, deposited

for the dead, are of most diminutive size, but moulded and finished. Superior intellect, yielding from policy to gross superstition, must have presided over Egyptian Decorative Art.

Among the implements, furniture and equipage, pictured on the walls, as also among the coins, necklaces and other articles found in the tombs, the earthen and glass ware of the Egyptian are wonders of early art. In earthen-ware, which is baked aluminum or clay, the Etruscan vases are first, and the Egyptian second in rank. In glass which is silicon, or sharp quartz, fused with alkaline earths and metallic oxides, the Egyptians are first. Glass blowing in all its processes is pictured in Egyptian tombs; while glass beads, bottles and tablets are still found. In the British Museum is a thick tablet brought from Thebes, of white glass with colored threads forming a perfect mosaic running through its mass. The figure is star-shaped with a rose in the centre; having foliations at the corners, and birds and other devices intervening. The colors introduced are blue, red or rose, yellow and green; and modern chemists agree, that, "for the blue and green oxide of cobalt or calcined copper and zinc, for the yellow oxide of silver, and for the rose oxide of gold, must have been used." The perfect union, without intermixing, of the various colored threads by fusion when drawn out and laid together, though attempted in Bohemia, has not been copied in modern times. Enamelling, or the coating of earthenware with a vitrified or glassy surface, is beautifully illustrated in the small mummy-gods now found in the tombs; and Pliny mentions an emerald, or enamelled obelisk, sixty feet high, standing at his day in the temple of Jupiter Ammon on the Great Oasis.

Sect. 2. Indian Decorative Art; the originating source of the Asiatic style.

The records of ancient history, already quoted, show the extended and controlling influence of the science and art of the superior ruling caste of India throughout southwestern Asia and the adjoining regions of Africa. The history of the trade of India with the Egyptians, Phenicians and Hebrews before Solomon's day, indicates that not only the raw material used in decorative art, such as ivory and sandal wood, but, as we have seen, decorated articles made from these materials, imported to Egypt in Moses' day and to Phenicia in Solomon's age, were used by the Hebrews.[1]

[1] See B. I. ch. vii. sect. 1, and B. iii. ch. ii. sect. 6.

While ancient history points out India as the originating source of ancient decorative art, the importations of modern times show that they still hold this position. While Herodotus and Pliny concede superiority in this department over the Greeks and Romans, modern English residents agree that in silk and cotton-weaving, Indian operatives show skill superior to that of Western Europe. The elaborately adorned boxes, picture-borders, &c., brought by almost every ship from India, makes the character of their art in this respect too familiar to require description.

Sect. 3. Chinese and Japanese Decorative Art; the degenerating stage of the Asiatic style.

Two impressions are made on the observing traveler as he surveys Chinese art. The first, is surprise at the amount of decoration heaped on all things around him, crude in conception, rude in form, and tawdry in ill-contrasted hues; the second is a conviction that could the native Egyptians be made to live again, the modern Chinese would be their fac-similes. Among varied resemblances of the relics from Egyptian tombs to Chinese arts, that of stereotyping is specially remarkable. On the bases of small cones of baked clay of about four inches in diameter, several raised lines of hieroglyphics run as chords of arcs; making together an extended record. These could not have been executed except by the modern Chinese method of printing on the soft clay with an engraved stereotype plate of wood.

Among the triumphs of Chinese art, is their superior porcelain. Porcelain is made mainly of feldspar; partly fusible like silicon, and partly infusible like clay; the two intermixed, forming a translucent though not transparent compound. The Chinese were for ages sole masters of this art, because their country alone was known to furnish the material; the infusible portion *kaolin*, and the fusible *petuntse*, when mixed, giving the watery white of ordinary porcelain, which is colored at pleasure by metallic oxides. The art was known in China in very early times; the Greeks called it *keramicos;* but even the Etruscans, who made enamelled or glazed ware, seem to have been ignorant of this material fused throughout. The Portuguese brought porcelain as a wonder from China to Europe in 1503; the clay was discovered in Germany, in 1708, in England in 1755, and in France in 1765; from which eras the European art dates.

Japanese art in decoration, as in painting, excels the Chinese in coloring as well as in form. Some branches of decorative art seem

to be peculiar to that people; as the method of giving adhesion to colors laid on tin, called Japanning. The specimens of the decorative art of both China and Japan, are met in every sea-port of the Western World.

Sect. 4. Polynesian and American Decorative Art; the lowest degradation of the Asiatic style.

The European Colonists of America have been made specially familiar with the degenerate style of Asiatic decoration. The aborigines of the Western Continent show such a devotion to decoration that scarcely any article used by men or women is unadorned; while the frequent visits of these rude natives to the white settlements are chiefly made for the sale of their decorated workmanship. Not only the extensive collections made by national explorations, but the return of every vessel from the Pacific, adds to the treasures of Polynesian decorative art.

A careful comparison shows a kindred taste, varied in different climates by the necessities for the comforts of life, and the material furnished for their supply. In all climes purity of color and fineness of texture in material is appreciated; as is seen in the choice for carving of black ebony, white ivory and rose-colored coral of the warm latitudes, and of polished flint and of lustrous quartz in the cold regions. While the Northern Indians select the skins of the buffalo and deer for the decorating dyes and needle-work of their dress, the islanders of the South carefully prepare the thin membranes lining the interior of the larger animals; the spirit of art guiding the selection, and prompting the adornment, while limited culture makes their artists remain forever children in taste and in execution.

After the survey already taken in the history of the higher arts of the track by which these people reached their present home, it is natural to recognize their art as the degenerate Asiatic. The traveler in Media and Abyssinia, in Eastern Africa, and in Ceylon and other Isles of Southern Asia, meets the counterpart of this degenerate taste and execution; where its connection with its centre can be directly traced.

Sect. 5. Hebrew Decorative Art; the central and hallowed type of the Asiatic style.

The Hebrews have gained no fame either for wealth or for civil and military glory as compared with other nations; but as the people "to whom were committed the oracles of God for the nations,"

they have a name that never will cease to be glorious. All professed revelations, the Vedas of India, the Zendevesta of Persia, and the Koran of Arabia, have emanated from Asia; for false coin always commends itself by issuing from a fount hard by the source of the true. Both the Old and New Testament have come to the world mainly from Hebrew pens; the unwritten traditions of miraculous Divine interposition live in Judea, as do the surest memories of the past in other lands; and sacred symbols hallowed there have been reverenced in all lands and ages. It was natural that a peculiarly sacred character should be given to Hebrew decorative art.

This showed itself directly in religious emblems. The Hebrew altar and candlestick, whose dimensions and ornamentation are so minutely described, have become types for all ages. Given to decoration as a people, covered with jewelry as were the wives of Abraham and of Isaac, and the Israelite matrons who gave their ornaments to Moses for the tabernacle in the wilderness, the richest of this outlay was expended on the priest's garments; to which such a sacredness was attached that even the golden fringe of the priest's robe, with a bell and a pomegranate intervening, was copied from the Divine dictation.

Aside from this direct hallowed character in religious decorations, an indirect sanctity attached to civil and secular ornamentation. While as military standards on their march, each tribe and family had the banner of its clan, no common national standard was to be reared among them, except the ark or chest in which were borne before them the tables of the Divine Law. Even the common utensils had a sacredness continually kept in memory by the "washings" to which "pots and kettles, beds and tables" were to be subjected; the idea of which is embodied in the prophet's declaration, that when the Hebrew people assumed their high prerogative as a religious people "Holiness to the Lord" would be inscribed "even on the bells of the horses."

Thus hallowed, Hebrew art had its secular connections with their surrounding and kindred Asiatic neighbors. As we have seen the model of Moses' ark was substantially Egyptian; and Syrian artists wrought the ornamented vessels of Solomon's temple. As the true idea of sanctity is the setting apart of common material, as wood and brick in a Church edifice and bread and wine used at the Lord's Supper, from a secular to a sacred use, so Hebrew decorative art was a hallowed, though in many respects a common type.

SECT. 6. ARABIAN, PHENICIAN, SYRIAN AND ASSYRIAN DECORATIVE ART; THE FIRST STAGE OF ADVANCE IN THE ASIATIC STYLE.

The Arabians, a higher Shemitic family intermediate between India and the more advanced African races West of the Red Sea, having a language two-thirds of whose words and all of whose grammatical constructions are Hebrew, have ever had a quickness of thought and practical enterprise fitting them to be skilful and prolific manufacturers of decorated useful articles, though never masters in higher art. Their proximity to the superior race of India and their scope and independence of thought forbidding the restraints on genius which controlled Egyptian art, the Arabian artists have always been prominent for a high type of decorative art. The designation Arabesque, is expressive of this native characteristic; a term applied to the projecting and almost overhanging tracery work of porticoes, balconies, cornices, parapets and turrets, heaped upon the façades of Moorish Castles, palaces and mosques in the medieval age of Arab supremacy, and afterwards given to the high and bold embossed work, elaborate in carving, and rich in ornamentation, which was at a later period introduced into almost every variety of decorative art.

The Assyrians, an Asiatic family intermediate between India and Asia Minor, from time immemorial having as their wise men the sage Chaldeans, often associated by commerce or conquest with the Persians, felt the influence of three superior races. While their architecture, sculpture and painting thus became an improvement on the Egyptian, decoration was their chief aspiration in art; the pictures given by the Hebrew writers of the Books of Daniel, Ezra, Nehemiah and Esther, as well as the records of Herodotus and Pliny and other Grecian and Roman writers illustrating this characteristic; while the explorations of Layard have made it palpable not only in architectural ornamentation, but in implements and utensils of every variety.

Syria, lying East of the Eastern range of Lebanon while the Phenicians occupied the Mediterranean shore West of the Western range and the Israelites in Solomon's day the intervening valley having Baalbeck as its centre, had as its capital the city of Damascus; which, unlike any other great mart of the old world, has never, since the age of the patriarchs, lost its peculiar character as a rich and thriving commercial centre. Through it passed the track of the richest trade from India; the products of Southern Asia coming up the Persian

Gulf and Euphrates to a point East of the Phenician sea-ports; whence, transferred to the backs of camels, it passed over by Damascus as a half-way depot to Tyre and Sidon, to be distributed to every country bordering on the Mediterranean. The numerous words *damask*, a silk fabric with raised or embossed figures, *damassin*, a similar silk interwoven with threads of gold and silver, *damaskin*, a sword-blade of rare tempered steel, and *damaskeen*, the adorning of steel sword-blades and scabbards, knives, etc., with inlaid gold and silver thread, all these terms of art are a testimony to the commanding position, still maintained, which Damascus has always held as master of the world in decorative art.

Phenicia, again, a long narrow strip of coast-line extending along two-thirds of the entire Eastern border of the Mediterranean, having little in its ragged strip of arable land or even in its mountain treasures of iron and marble, cedar and fir, but everything in its control of commerce on the Mediterranean, to give sustenance and power to its people, had artisans famed for their skill in decorative art. Being undisputed masters of the Mediterranean, receiving on that sea the wares that came by three routes from India, the first, or Egyptian, up the Western gulf of the Red Sea and thence overland to Rhacotis afterwards Alexandria, the second, or Tyrian up the Persian Gulf, and the Euphrates and thence overland by Damascus to the Phenician ports, and third, the Hebrew of Solomon, up the Eastern Gulf of the Red Sea to Eziongeber, thence overland past Sela or Petra and Jerusalem to Joppa, Phenician sailors and merchants called forth Tyrian artists. Some few, aspiring to higher art, became eminent, as in Solomon's employ, in architecture and sculpture. The main end of Tyrian art was the ornamented useful. The Hebrew prophet describes in glowing colors its treasures. Pliny tells us that glass was invented by Tyrians; the discovery of its ingredients first being made by Tyrian sailors, who, kindling a fire to cook by on their sandy shore, observed that clay and sharp quartz fused by the heat mingled and cooled into a transparent crystalline compound. The shells in which is deposited the famed Tyrian purple are still gathered in abundance along that extended coast. To such extent was decoration carried by the princely Tyrians that not only men and women but their riding camels were decked with necklaces and jewelry.

When, after the fall of the Roman Empire and the succession of the Muhammedan over the entire Eastern and Southern border of the Mediterranean, this trade along all its routes with India was interrupted, and the enterprising mariners and merchants of Southern Italy,

especially of Genoa and Venice, making interest with the Saracens, got possession of the carrying trade, both on the Mediterranean and on the waters of Southern Asia, not only the wares and material of India but the arts of Arabia and Damascus were introduced into Europe. One of the most fascinating episodes in Cennini's history of early Italian art is a description of his own enthusiasm in trying to copy a splendid specimen of a Damascus scimetar; whose tempered blade and soft steel scabbard were inlaid with exquisite foliated and tracery work in gold and silver thread.

SECT. 7. PERSIAN AND GREEK COLONIAL DECORATIVE ART; THE MOST ADVANCED ASIATIC, AND THE CONNECTING LINK TO THE GRECIAN TYPE.

The close connection between the Persians, the second in the line of developement among the families of Japhet, with the Greeks in the Asiatic colonies, has been noticed in the higher arts. A succession of Greek authors, as Homer, Herodotus and Xenophon in their descriptions of articles adorned by art, trace this connection far more fully in the department of ornamentation. Helen's tapestry, Priam's sceptre and Hector's helmet, are among the earlier and richest memorials of this art.

The peculiar design and execution of this people, borrowing from the unchanging Asiatic and the progressive Greek are preserved in almost every department of art. The religious symbols of the pyramidal tumuli reared as funeral piles in memory of Hector and other Trojan heroes, still intensely expressive monuments near the site of the early fallen city, yet tell of an idea originating in Egypt and India. The insignia of civil power, embodied in the sceptres and crowns described by Homer, reveal a sentiment called forth by Grecian thought but speaking of a rule to which only Asiatics have ever submitted. The architectural ornament, already alluded to, of the trefoil cornice relief, is an original device suggested by a taste approved by the most advanced culture. In the lowest of all the walks of art, that of dress, personal ornament and household furniture the Persian made his indelible impress on Greek and Roman customs. The lofty Persian tiara, described by the Hebrew Daniel[1] and Grecian Xenophon, preserved still in the high conical cap of the Persian noble, show an early discovery and fixing of types of true beauty. The necklaces worn by ancient noblemen, depicted in the sculptures of Persepolis, recall Egyptian ideas illustrated in the his-

[1] Daniel v. 7.

tory of Joseph. The use of the couch for reclining at table introduced from Persia through the Grecian colonies into Greece proper and thence into Rome, the history of which is expressively epitomized in the *klinē* of Matthew the Hebrew addressing Asiatics, in the *klinidion* of Luke the cultured Asiatic-Greek appealing to Greeks, and in the *krabbaton* or Latin *grabbatum* of Mark writing for Roman readers, all describing as biographers of Jesus the bed of the paralytic, is a memorial of the special power of decorative art to fasten an Asiatic model in European esteem.

CHAPTER III.

EUROPEAN DECORATIVE ART; CONTROLLED BY THE ALTERNATING PROGRESS AND DECLINE OF SCIENCE AND ART, OF SOCIAL, INTELLECTUAL, MORAL AND RELIGIOUS IMPROVEMENT.

THE traditional reverence for the past and prejudice against change of the Asiatic has caused their art in every department to remain fixed in the type established from time immemorial. In dress, equipage, furniture, implements, utensils and personal ornaments, as well as in sculpture, architecture and painting, the standard of design and of execution, fixed ages ago, still rules. The spirit of the European is formed to conceive that his own are better than his father's ideas; and, aspiring to progress, the ancient Greek and Roman, in common with modern Europeans, would have change, though it were a retrograde. This native characteristic is the clue to the history of European Decorative Art.

SECT. 1. GRECIAN DECORATIVE ART; MATHEMATICALLY EXACT IN FORM, CHASTE IN ORNAMENTATION AND FINISHED IN WORKMANSHIP.

In constructing a pedestal for a statue, in working up the cornice of a temple, or in embossing a vase, the Greek artist is seen everywhere to have been governed by these three principles. First in form the Greeks conformed every feature to the exactness of mathematical truth; as is seen in the triglyphs mutules and trefoils of a cornice, perfectly regular, and their forms delighting in straight lines and right angles in which the slightest deviation from accuracy is manifest, as it is not in figures bounded by curves or many-sided. Hence second, the Greeks found beauty in simplicity; the Grecian archi

trave serving as a border for the frieze being noted for its plainness, while the grace of the Grecian vase was the chasteness of its perfect curve unbroken by embossed work. Since, thirdly, this mathematical exactness of form and grace of unbroken outline is impossible without care and labor in execution, the minutest portions of every ornament in Grecian architecture or sculpture was finished with extreme elaborateness.

These characteristics displayed in the accessories of higher art showed their influence in every species of Greek decoration. At Athens in its earlier history the Ionic race predominated; whose females wore long flowing robes, and hair curled or frizzled and held by the fillet decked with attached jewelry, as embodied in the Ionic capital. At a later period, the Dorians from the Peloponnesus gaining the ascendency, and their simpler customs, which had always held sway at Sparta, prevailing, the short skirt of the mountains and the hair plain as among people having little time for personal adornment, became the Athenian model; Grecian sculpture uniting the beauties of both styles, making female hair always frizzled or wavy, but tied in a simple knot. The early Ionian custom of free social intercourse, families living in the open air by day, led to costly expenditure in private furniture as is intimated in Homer; while the Dorian severity of manners, restricting women to greater seclusion and inviting men to horde separately, diminished the demand for costly private mansions. The control of mathematical ideas in Greek decorative art is seen in the tripod as the support of light-stands, chairs, etc.; an idea based on the perfection of the triangle, and common among the Greeks despite its inconvenience and insecurity as compared with four-footed supports.

A kindred simplicity in funeral monuments, most marked as compared with the pomp of Roman taste, prevailed among the ancient Greeks. Burning of the dead, regarded a disgrace in the early history of sepulture, seems to have been resorted to as a necessary safeguard for the living; as on battle-fields heaped with the slain and in crowded cities where there is daily mortality. In the case of either burning or burial, the vase for the ashes, or the tablet at the grave was specially plain and chaste.

Sect. 2. Roman Decorative Art; varied in detail, rich in ornamentation, and elaborate in workmanship.

The same cumbersome detail and gorgeousness of decoration which enables the student to select Roman from among Grecian architec-

tural columns and pedestals of statues, pervaded Roman decorative art. While the labor of the Greeks was devoted to the polishing of smooth unencumbered surfaces to the nicety of mathematical measurement, the Roman's toil was exhausted in rounding out embossed decorations; to which it was impossible to give a true finish.

The Romans, unlike the Greeks, began their life as a nation with a severe system of religion; of which Numa was the representative. It abjured sculptured images, and delighted in the blank rotunda without portico or cornice. This early fundamental principle, modified to an excess of elegance under Grecian and Asiatic sway, made decorative art to assume a simplicity of ground-work which became a permanent characteristic. Roman buildings, furniture and dress are formed pre-eminently for utility. The custom of burning the dead, and the peculiar funeral vases it called for, were the exponent of the practical spirit of the Roman; resolutely exacting from death itself sanitary regulations which restricted his sway.

The collections of Roman decorative art at Rome and Naples, in every department of human want, illustrate its character. Their altars and tripods are heavier than the Grecian, and for this reason more stable; but profusely decorated. Their private houses unburied at Pompeii, have almost universally frescoed walls and floors inlaid with mosaics. To the *tunica* or frock-shirt, at first short without sleeves and of wool, afterwards sleeved and of linen or silk, the Roman added the *toga* or sack-coat assumed at opening youth; the kindred garments of the women being the *stola* or chemise, and *palla* or loose sack; while the native fondness for ornament displayed itself in the rings universally worn by men, and in the profusion of jewelry decorating their women. The accumulation of elaborate furniture in beds, tables, chairs, and varied conveniences, forbids enumeration. In memory of the dead, large heavy vases held the ashes of those cherished by a family, and grand mausolea covered the nation's honored; while in place of Grecian deification of ideal heroes the Romans of later times ascribed an *apotheosis* to their corrupt Emperors.

Sect. 3. Early Christian Decorative Art; marked especially by symbols of religious ideas peculiar to the new faith.

Diognetus the instructor of Marcus Aurelius about B. C. 140, wrote of the early Christians; "They are not distinguished from other men by their place of residence, their language or manners; but though they live in cities of the Greeks and barbarians, each,

where his lot is cast, in clothing, food, and mode of life following the customs of their country, yet they are distinguished by a wonderful and universally astonishing conduct and conversation." In the same age Tertullian wrote, "If those are converted who were makers of idols, they must pursue some other branch of their art; repair houses, stucco walls, line cisterns or coat columns." These kindred statements show that in all that related to decorative as well as higher art, the early Christians were transformed in nothing but in the religious themes that occupied their artists.

Didron in French, Münter in German, and Lord Lindlay in English, have brought together numerous details explanatory of early Christian symbols; whose simple teaching is revealed in the allusions of the Fathers and primitive historians of the Church. The emblems wrought into their decorative art, religious in their themes, relate to representations of the Divine Being, of leading characteristics of the apostles and other Christian advocates, and of the doctrines of Christian truth. The only representation of God the Father was a hand and arm stretched from a cloud seen to the elbow.[1] The Son was symbolized by the monogram of the X and ρ in *Christos* overlapping; by a cross; by a lamb sometimes with a halo and cross; by a lamp; by a vine; by a rock; by a pelican, supposed to feed her young with her blood; and by a fish in a halo, the word *Ichthus,* fish, being made of the initials of the Greek *Iēsous, Christos, Theos, Uios, Soter.*[2] The Holy Spirit was figured by the dove bearing an olive branch, and having a stream of water issuing from her beak; also by a candlestick whose seven branches represented the Spirit's perfect gifts.[3] The Trinity was pictured by three beams of light radiating from Christ's head; by a rainbow with three arches, sometimes encircling Christ and sometimes forming his seat; by the thumb, fore and index fingers of Christ raised erect and straight as in the benediction; or by the index finger straight and the thumb hooked, the index and ring finger crossed, and the little finger crooked, making together the letters I. C. and X. C., the first and last letters of the two Greek names *Iēsous Christos,* as written in ancient characters. The four Evangelists were designated either by four rivers, or by the four heads of an angel with Matthew, of a lion with Mark, of an ox with

[1] Ezek. ii. 9; viii. 3.

[2] Isa. liii. 7; John ix. 5; John xv. 1; Ex. xvii. 6; 1 Cor. x. 4; Psalm cii. 6

[3] John iv. 14; Prov. i. 12; iv. 5.

Luke, and of an eagle with John.[1] The apostles were indicated, Paul by a sword, Peter by keys, and the remaining ten by varied symbols. The faithful redeemed were indicated by sheep tended; by fish in a net; by doves feeding on corn and grapes, or drinking from a fountain; by deer at a brook; by date-palms or cedars; or by Cupids, or Cherubs sporting among tree-tops.[2] Sanctity was indicated by a *nimbus* or cloud encircling the head; sometimes in the form of white light radiating, sometimes of a rainbow with its separate arches, and sometimes of a golden ring.

Among doctrinal truths the spirit of evil, or Satan, was designated by a serpent; the atonement by a cross decorated with wreaths; the two covenants by a wheel within a wheel; and the Christian course by the sun and moon.[3] The three graces had as their emblems, for faith a cross, for hope an anchor, for charity a heart; while purity was represented by the lily; incorruptibility by a rose; victory by a wreath of palm; and peace by an olive-branch borne by a dove.[4] The Church militant was pictured by a female with her hands raised in prayer, by a vine, and by a ship under sail; the Church triumphant by a walled city; and the Catholic Church by a mountain rock.[5] The sacrament of baptism was symbolized by water poured on the cross, and the Lord's supper by wheat in the ear and grapes, or by a loaf of bread and a cup of wine. The Universe was typified by a globe usually blue; Heaven by a segment of a globe either blue or in three rainbow arches; Paradise by a mountain; eternity by a circle, sometimes surrounding Christ; the resurrection by a phœnix, or by the peacock who loses his rich plumage in winter and has it renewed in Spring; and eternal life by a river fed from a mountain in which Cherubs are bathing.

The well-preserved relics of this primitive Roman Christian Symbolism, constituting all which is distinctive in the simple ages of Christianity which preceded Constantine, are abundant in the Catacombs at Rome, in Church decorations at the old Italian town of Ravenna, and in the old mosaics of Byzantine origin already noticed. These latter form the transition link to the next age.

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[1] Gen. ii. 10; Ezek. i. 10; x. 14; Rev. iv. 7.

[2] John x. 14; Matt. xiii. 47; Ps. i. 3; xlii. 1; xcii. 12; Isa. lxi. 3; Jer xvii. 8.

[3] Ezek. i. 16.

[4] Heb. vi. 19; Rev. vii. 9; 1 Cor. ix. 25.

[5] Ps. lxxx. 8; Isa. v. 1; Rev. xxi. 1; Ezek. xl. 2; Dan. ii. 34.

SECT. 4. LATER AND MEDIEVAL DECORATIVE ART; SECULAR, SOMETIMES IRREVERENT AND UNDIGNIFIED IN DESIGN, AND EXCESSIVE IN ORNAMENTATION.

In the decorative, as in the fine arts, the secular spirit that pervaded the Church when under Constantine it became the State religion, was for ages unfavorable to simplicity of design and truth in execution. After the period of primitive simplicity the symbols of Divine beings and hallowed personages, of revealed truth and of sacred things were converted into images. God the Father was pictured as an old man bare to the breasts, with arms at rest on a cloud looking down upon the holy mother and child; or holding up an image of Christ on the cross, while the dove hovered above. At the Council of Trent, A. D. 692, it was ordered that images of Christ should be made for Churches in place of the symbol of the Lamb; when for a season till the eighth century, master-pieces of design in Mosaic and painting were produced. Then symbolism again arose; alternately reviving and declining till the able artists of Italy re-established them on a permanent basis. During these ages, Jesus was not pictured alone; but to meet the yearning of human nature for feminine adoration, regarded as belonging to true religious reverence, the mother of the Divine Son, never introduced prior to Augustine's day as he intimates, was constantly made the companion of her son, maternal in aspect and employ. To oppose the heresy of Nestorius she was by a decree of the Council of Ephesus, A. D. 431, represented with the child on her knees; from Solomon's mention "I am dark yet comely," she was sometimes pictured as a dark brunette; and in the twelfth century she became majestic in mosaic, preparatory to the matchless Madonnas of Raphael. Symbols and decoration appropriate accompanied these improvements in this higher art; particularly in the dress of the head and person of the virgin.

Architecture now assumed a distinct ecclesiastical type; and decorative art found a limitless field. The word Church, in German *kirche* and in Scottish *kirk*, is from the Greek *kyriakē*, or Lord's; house being understood. The Church edifice, having, as observed,[1] for its ground-plot a cross, had as its three principal parts the choir at the head of the cross or rear of the building, the transept or arms of the cross, and the nave, which was the body, or foot of the cross, and the

[1] Book IV., ch. v. Sect. 1.

great gathering place of the congregation. In front was the portico or entrance; within which, formed of a narrow section of the nave near the door-way, was the place for penitents and those under Church censure, called in the Greek *narthex* or *oblong* from its shape. The choir was the chief centre of decoration. The walls were frescoed or hung with oil paintings and had niches for statuary. The floor had a raised platform called *bema*, with steps for ascent; in front of which was a railing called *cancelli* or chancel. Upon the *bema* was the altar, before which was the *cathedra* or bishop's chair; whose position was called from its Divine sanctity *hierateion*, from its human unapproachableness *adyton*, and from the authority of the utterances announced *ex cathedra* or from the chair, denominated *presbyterion*. The altar was decorated, as now in the Greek and Roman Churches, with candle-sticks, chalices, crucifixes, &c., and the chair was carved with a crosier, a mitre and varied devices.

Back of, or at one side of the altar, was the singing choir; aided in the early Church by various instruments, and as early as the days of Charlemagne, seen in the Cathedral of Aix la Chapelle, by the organ; though in the Greek Church, and in some ages and portions of the Roman Church, instruments of music were discarded on the principle of Thomas Aquinas, who wrote A. D. 1250, "Our Church does not use musical instruments, as harps and psalteries, in the praise of God, lest she should seem to Judaize." The organ and choir gallery, afterwards moved to the side of the Church and transept, and then to the front or bottom of the nave, was always a point for special decoration. In front of the bema and at the speaker's right was a small circular or octagonal pulpit, with a spiral staircase; which in larger churches was located at the junction of the nave with the transept so as to bring the preacher nearer to his hearers; every part of which pulpit was enriched with studied ornament. In the larger or Cathedral Churches an octagonal building called *Baptisterion* was added in the rear, sometimes separate and large enough to accommodate a considerable audience; the precursor of the font beneath, or the bason in front of the platform of the modern pulpit. The baptismal font, as in the Cathedrals of Rome, Florence and Pisa, was a special object of rich decoration. Yet later a bell tower, sometimes separate from the edifice, with richly decorated balconies and bell, was also added. The enormous bells of Paris, Toulouse, Milan, Vienna and Moscow, cast during this period, prove the grand conception and skilful execution in this art to have been widely extended through Europe.

The decoration of doors, windows and pavements in churches at this era, brings out both the merits and defects of medieval art. The general style of Church decoration in the Middle Ages was sometimes of admirable design, but sometimes unworthily grotesque; a feature most manifest at the entrance door. In the rich adornment of stained glass, an art said by Pliny to have been known to the Romans, as it was to the Egyptians, the skill of the Middle Ages far surpassed that of modern times; rather, however, in the lustrous transparence of colors than in the conception and execution of the figures wrought into the glass. Into pavements of Churches were wrought, also, the mosaics, borrowed from the Roman, now seen at Pompeii; whose consideration as panel paintings has been already considered.[1] The themes of these mosaics in pavements are hinted by St. Bernard, the somewhat extreme reformer, in his criticism, "Those passing over them often spit in the mouth of an angel, or grind the face of some saint with their heels;" an objection perhaps as much to the manners of the worshippers as to the design of the artist.

Next to architecture, dress, especially of the clergy, both as to form, insignia and color, became a study in decoration. In the simplest ages dress was not modified either by the rich or poor among private Christians or their inspired teachers as we have seen; for while John's raiment was of coarse camel's hair cloth with a leathern girdle, Jesus wore a tunic of the costliest fabric, woven without seam from the top throughout, while his other raiment was worth dividing; Paul wore a coarse Roman overcoat; and in the Christian assemblies rich men appeared with gold rings and the poor in cheap raiment, while women wore braided hair and jewelry. At a later period the ascetic tendency prevailed, some of Roman patrician birth laying aside the gay *toga* to which their rank entitled them for the plain *pallium* or short cloak of the humbler class, while in the East for a time white was adopted as a costume indicative of purity; which ideas, though revived by certain classes of religionists to this day, met in that early age with the reprobation of the intelligent; Tertullian saying, "We are no Brahmins; We are no Hindoo fakeers; We are no eremites or hermits, who flee from life."

In the dress of ecclesiastics, however, there was an early and permanent regard paid to propriety; as in the black, still retained as an official clerical dress, in which both form and color are considered;

[1] See Book V., ch. vi. Sect. 3.

while the spirit of the Middle Ages added extravagances of form and color as well as of insigna. As a head-dress, the turret-shaped cap, peculiar to Persia, worn also by the Jewish high-priest, was introduced; illustrated in the bishop's mitre and the cap of the modern Jesuits; often richly adorned with embroidery, jewels and pure colors. As the official dress for the person, the *stolē* or robe of the Roman Emperor in his character of Pontifex Maximus, was, as Gregory of Nazianzen records adopted; to which was afterwards added the ephod and even the breast-plate of the Jewish high-priest. As appropriate colors, white was selected for the dress of apostles and martyrs, indicating purity; red and blue for Jesus and his mother, indicating royalty and celestial dignity; while the purple of imperial Rome was afterwards added as indicating ecclesiastical authority. As insignia the superior clergy wore the ring, indicating at once sacred espousals and authority as primates; they bore the crozier, or cross-tipped baton, bespeaking at once an Eastern shepherd's watch-care, and an Eastern prince's dignity; while afterwards the cross was sewed and broidered upon the neck or breast, emblematic of special consecration, and as such worn in red upon the coats of all the crusaders. In the early days of Roman imperial persecution the custom of making, or wearing the sign of the cross had arisen; Origen, as we read, when compelled to hold palm-branches in honor of the idol at the temple of Serapis in Alexandria, signing himself by passing his hand constantly in the form of the cross over his forehead and breast; while images and pictures of the cross were stamped with India ink on concealed portions of the person, as in late days among the followers of Xavier in China; or were sewed into boys' caps or belts, or worn with strings or chains of silver and even of gold about the neck.

The civic and military decoration styled "heraldry" from *herald*, and "blazonry" from *blasen*, both meaning to proclaim or announce aloud, refers to the methods of indicating by insignia the nationality, community and family of knights when completely cased in armor so that they were unknown. Though known as early as the age of Henry I. of England, it became especially in vogue during the Crusades, and was perfected as a system afterwards. The field of armorial bearings is a shield or escutcheon; above which was a crest; below a scroll for a motto; and at the sides, and around, the colors adopted. The escutcheon was divided into nine compartments; three horizontal at top called the dexter, middle and sinister chiefs; three at bottom called dexter, middle and sinister bases; and three per-

pendicular uniting them, called honor, fess and nombril points; the dexter being at the left of the beholder and the honor at top. The field again is divided by diagonal bands; called, chief, pale, bend, bend sinister, fess, bar, chevron, cross, and saltire. There are eight curved or bent lines dividing the field; the engraved, inverted, wavy, embattled, nebuly, raguly, indented and dancette. Nine colors are introduced; *or* or gold, *gule* or red, *azure* or blue, *sable* or black, *vert* or green, *purpure* or purple, *tenny* or orange, *sanguine* or crimson, and *murrey* or brown-red. Finally, various figures, as crosses, shells, birds, beasts, dragons, stars, flowers, &c., called charges, are inserted. This study alone demands a volume.

Sect. 5. Modern Changes in Material used in Constructive Art; modifying the form and style of ornamental work.

Most of the material anciently used in architecture and sculpture, as well as in decorative art, is now employed; while modern science, especially in the department of chemical analysis and modern invention, superior to the ancient in its tests, has been able to suggest new substances and new methods of employing them.

Wood, brick and stone in building, and clay, marble and bronze in sculpture have been little improved; for casts of ornamental brick and stucco, carving in cedar and oak, and casting in brass are not superior in modern to those of the ancient times. Iron, however, for building is a modern suggestion; which, when used in domes and façades or fronts, requires special study to comprehend the law of its expansion and contraction; but which in casting allows, as is now seen in the foundries of Nuremburg, Germany, any sculptural form or architectural style, to which its texture and color may be adapted. The modern Parian, a composition neither of earthy nor porcelain, but of marble texture, susceptible nevertheless of clay or plaster-like moulding and casting, may open the way to improved sculpture; though in this department, unless it be in improved alloys of the metals, probably the ancients cannot be surpassed. Methods of coloring, taught by modern chemistry, certainly have sought and still must lead to valuable hints. Thus the *moiré antique*, or ancient water-tint, suggested to a French chemist after Sir David Brewster had invented the kaleidoscope, giving, through the action of acids with various pigments on metallic plates, the wavy forms of frost on window-glass with the rainbow hues of the kaleidoscope, is founded on a principle which may yet lead to the copying of colors in photography.

Sect. 6. Modern Improvements and Deterioration in Handicraft; influencing the finish of decorative details.

The hand of man, like his intellect, is, in the same race, of substantially the same native skill in all ages; modified as to improvement or deterioration by circumstances of education and culture. Several causes in modern times have led to both these opposite results.

The introduction of modern machinery, turning out not only such regular work as the runnels of a balustrade, and that either in wood or marble, and of such irregular forms as a shoe-last, must certainly give an exactness of form to objects to which it has been applied such as was absolutely unattainable by the human hand. At the same time neglect of handicraft, because of this easier method, tends to a degeneracy in forms whose execution must still be entrusted to the skill of the carver and chiseller. The oak carving of to-day is far inferior, ordinarily, to that of former ages.

The aid of improved chemical agents enables the modern workman to copy and improve upon the hoary lessons of Asiatics taught among them from father to son. Thus when Cennini grappled with the difficulties in the art of Damaskeening, a specimen of which had come to him through the Venetian traders, the improved knowledge of chemical agents, which at last culminated in a Galvani came to his aid; and in Western Europe this art has since surpassed the Oriental original. In porcelain and glass staining, however, experiment has not attained to the chemical law; and thus these arts are yet behind their Asiatic types.

Sect. 7. Modern Methods of Locomotion; varying the form, color and decoration of vehicles for land carriage and of vessels for marine transportation.

Man is a being whose active mind will not allow the rest which even the necessity for animal exercise allows. Made for the use of other than self-locomotive energy, he compels animal and even physical agents around him, as wind, water and steam, to minister to him their motion. All the animal and physical powers which seen mechanical effects reveal, including all those mentioned except steam, magnetic electricity and heat, perhaps yet to be applied, were known and employed by the ancients. The decorations of horses, camels, elephants and reindeer, of saddles and howdahs, halters and bridles, of sledges, wagons and chariots with their harness and other trappings may not perhaps find artists to surpass the ancients.

The introduction of steam on land has made land carriages to become traveling mansions. Conveniences for eating and sleeping, lounging and recreating, open a peculiar field for decoration. The car takes the straight line of a dwelling-house instead of the curve of the old rocking stage-coach; its interior calls for pictured walls imitating frescoes and panel paintings; while its furniture has opened an extended field for new styles and patterns. Such decorations must be controlled by the double idea of traveling equipage and of house-furniture.

The use of steam as a propelling power on inland waters and on the ocean, has quite transformed both the exterior and interior of passenger-vessels, calling for new styles of decoration. The tall cylindrical sheet-iron smoke-stacks, taking the place of the delicately tapering masts and cordage, the huge ungainly side-wheels, usurping the office of the gracefully bending sails, which make the monster of the deep seem a reptile with paddles splashing in the grosser element rather than a bird with wings sweeping through ether, call for a study such as taxed the ablest artists of Greece when even Protogenes found remunerative employ as a ship decorator. The inner saloons, especially of American river-boats, rivalling far any palace apartment the world has ever seen, with length most disproportionate to its narrow breadth and low ceiling, requires a special tact in order to secure proportion at the hands of the decorator. On the sea as on the land steam-locomotion has quite revolutionized carriage decoration.

Sect. 8. Modern Engines of Destruction in War; revolutionizing the style of decorating armor and offensive weapons.

In both its offices, as offensive and defensive, the use of gunpowder has had the effect to revolutionize decorative art as applied to armor. This agent has the double effect to make all defensive armor useless, and to convert war from a swift hand-to-hand skill in wielding a spear or sword-blade into a trained practice of the eye in the cool direction of a missile.

The brazen-armed hero of ancient and the steel-clad knight of the medieval times, with helmet, breast-plate, coat of mail, shield, greaves, buskin and shoes of stiff but shining metal, beauteous in its gracefully curved forms but of one-hued lustre, was succeeded by gayly variegated woolens and silks, with towering plumes to heighten the stature and padded vests and jutting epaulettes to give breadth of chest. All these again in the progress of art have been chastened into the sober blue and gray of close fitting jackets, with the scarcely

visible leaf, eagle and star on the shoulder indicating rank; until indeed the grandest representatives of the gorgeous East, the Sultan of Turkey with his chief officers of War as well as of the State, appear in a simple close-fitting skull-cap of red Fez, and tight-buttoned coat.

The offensive weapons, consisting of cannon, guns and pistols of greater or less calibre, specially exposed in active service to the bedizening foulness of soot and smoke, have received an order of decoration running parallel to that of personal costume. In the later medieval times, at the first invention of fire-arms, and since that in costly specimens for princely hands not expected to soil by use their showy decorations, pistols, muskets and even cannon have been adorned with inlaid and embossed ornamentation equalling that bestowed on Damascus scimetars; the matchlock muskets sent as presents by the Imaum of Muscat in Arabia as diplomatic presents, and even the richly embossed brass cannon of the days of Louis XIV. of France showing how wide a field for decorative art modern armor furnishes.

Sect. 9. Modern views of popular equality and of official Prerogatives; giving a new character to the insignia of rank.

There is an extreme to which the spirit of religious asceticism and philosophic pride of independence may go in simplicity of dress; illustrated in Elijah the Old Testament prophet and John the New Testament herald, as well as in Diogenes the Athenian cynic. The legitimate spirit of popular government, leading to the laying aside of the insignia of rank, is seen in every age; alike among the Judges of Israel, the Archons of Athens, the Consuls of the Roman Republic and the Presidents of modern Representative Governments.

In its modified form this characteristic is illustrated in the limited monarchies of Europe. In medieval and even comparatively later years, the officers of every rank, in the civil as well as military service, appeared constantly with the insignia, either in dress, equipage or accessory, of their authority. Now, in the French Legislative Assembly and in the Lower House of the English Parliament, though important coördinate branches of Government, only citizens' dress appears.

In Governments where other branches than the Legislative are elective the same absence of insignia is just to that extent observable Thus in the American Republic the Executive as well as the Legis-

lative heads being elective have alike no insignia of office; while the Chief Justices, not elective, wear still the official robe. So the "Citizen Presidents" of the French Revolution of 1798, as also Lamartine in 1848, laid aside, as by a law instinctively recognized, all official insignia.

The question is an open one, how far this omission of the badge of office is desirable in practice, not to say legitimate in theory. It has recently been found advisable that the police in American cities be designated by an official dress and badge. It has been found also inexpedient, if not impossible, to extend the ignoring of official costume to diplomatic representatives at European Courts where long established etiquette cannot be compromised. Perhaps true art may yet suggest becoming emblematic insignia suggestive of civil authority in other departments.

Sect. 10. Modern advances in the methods of diffusing knowledge; tending to unlimited multiplication and improvement in picture illustration.

In all ages and among all classes of men the eye has been found to be a special instructor of the mind. At a distance where written language is unknown, the savage's rude picture conveys his message; in all nations without revelation images of deities have been silent instructors; and one of the pleas for pictures in Christian churches has been their aid as spiritual preachers. It is to be remembered, however, that increased intelligence makes picture teaching inadequate and even deceptive, and therefore on many themes unworthy; that when the mind through instruction addressed by a present teacher to the ear, or by an absent teacher through the printed page, has gained the power of forming conceptions of things, as well as of sentiments, without pictures addressed to the eye, it has made a noble advance.

In modern as in ancient times the pictures of material objects may especially instruct through the eye. The ancient Egyptians accompanied their long lines of hieroglyphic records, themselves made up of small pictures, with extended carvings and paintings illustrative of their themes. The monks of the Middle Ages decorated initial letters in missals and other religious books with limnings of Scripture incidents to illustrate Christian truth. From the time of revived natural science, after Bacon, books on material themes, especially on Natural Science, have been illustrated by drawings. The pure mathematics must be, and the higher applied Mathematics, as Mechanics and even Astronomy may be, though very inadequately, illustrated

by diagrams; but, in all this department, if the pupil is not drawn away from the book, and trained to form his conceptions of mathematical figures and of the mechanism of the heavens independently of its diagrams, the mind has been led into error rather than into truth. So in the Fine Arts, as the artist may be at first a copyist either of a teacher's patterns or of any object in Nature, but must soon learn to conceive with no model before the eye, so the amateur, who studies art for the purpose of criticism, may be hindered instead of aided in his conceptions by the imperfect drawings of the text-book. Still in the department of history, natural, civil and religious, as in that of science, and in the field of symbolism secular and Christian, book illustrations may be as useful as they are common in their aid of the student's conception.

SECT. 11. MODERN REFINEMENTS IN METAPHYSICAL, MORAL AND THEOLOGICAL SCIENCE; ORIGINATING MODIFIED PRINCIPLES OF DESIGN AND OF DEVICES REPRESENTATIVE OF SPIRITUAL TRUTH.

There can be no doubt on the mind of the thorough scholar of the past and careful observer of modern European Society, that from Greece and Russia on the East, throughout Europe to the British Isles on the West, there is a steady present progress in all that makes up civilization. This is apparent in the great metaphysical writers of Germany, France and Scotland; in the zest for nice moral distinctions seen among the youth of modern Greek, English and American Universities; and in the progress of spiritual ideas and yearning for personal investigation of religious truth prevailing from Constantinople to Paris, and among the learned as well as the uneducated of England and America. While thus metaphysical and religious opinions are assuming, like those in natural science and philosophy, more of the unity which common study necessarily begets, the republic of letters has citizens in every nation won to it, and the community of art have diminishing restrictions upon their ever fraternal intercourse.

True study of man's mental nature, of his moral obligations and of his religious aspirings cannot have any other influence than to nurture, develope and elevate man's spiritual being. The progress of decorative art in this point of view is eminently progressive. The old forms of personal adornment, of civic insignia, of funereal memorials and of religious symbolism, becoming unsatisfying from their grossness, seek a more refined style of art. While the Sublime Porte manifest this improving power at the antipodes, the multiplex population of America, with adherents in religion to English, Ger-

man and Roman standards, are studying anew every department of religious as of civic decoration. Such a condition of Society cannot but call forth at last a harmony in some high order of art conception.

Sect. 12. The Prevalence of Spiritual views of the future life; influencing the style and the accessories of funeral monuments.

Much of man's devotion to art ever has shown and ever will show itself in funeral monuments; which speak at once, in pleasant memory of the past of the deceased, and in lively hope of his future. The Egyptian kings carried this sentiment at first to an extreme; building pyramidal abodes, as much more costly than their palaces, as the body's rest in the one was to be longer than in the other; while during all their history, Egyptian royal tombs were as expensive as their temples. In its early history, German, English and American Sculpture has been chiefly confined to funeral monuments; to which also it must be permanently devoted.

The marked distinction between modern Christian and ancient Egyptian, Hebrew and even Grecian and Roman types for funeral monuments, is to be traced to the distinct philosophy of each as to the power and province of death. The spirit of the ancients was based on the idea that matter is eternal; in its nature possessed by indwelling evil; as uncreated beyond the power of the Spiritual Ruler and Redeemer to transform and purify; and thence forever shut up to the lament which "says to Corruption, 'Thou art my father,' and to the worm 'Thou art my mother.'" The Spirit of the Orientalist is seen in the Hebrew patriarch seeking to buy a cave for a sepulchre, and urging, "that I may bury my dead out of my sight." The Egyptians locked up the dead in solid pyramids, and tombs close-shut and hidden; the Greeks and Romans consumed the dead body that nothing might remain but the ashes; and even Jesus was laid in a cave, and a stone rolled to the entrance. The funeral monuments of the East and of the ancients were in correspondence; in Hebrew and Arabian burying-grounds, flat stones being laid prone on the grave; the Egyptian and patriarchal being enclosed caves; and the Grecian and Roman having urns for ashes.

The Christian idea is based on the truth revealed in Divine Revelation, and in Christ's personal resurrection: that material things "now appearing" to the eye, were "made of that which before Creation had no actual existence;" that matter whether in the heavenly bodies, in earth, or in man's frame was made from nothing by God's word;

that in itself neither matter nor spirit is evil, or possessed by its Spirit; that though Divine Wisdom has allowed to the Spirit of evil the title "Prince of the power of the air" as well as "Prince of this world," in due time the Divine Power will bruise Satan, or the Accuser, under man's feet; and that after death "both soul and body" may be redeemed. The spirit of this Revelation, confirmed in Christ's Resurrection, led Jesus and Paul to call death "sleep;" it prompted the pleasant emblems of the early Christians on their tombs; it is kept alive in the funeral rites of Oriental Christians, as well as of Muhammedans whose prophet in the Koran borrowed the Christian idea, who carry the dead body laid out in state in an open decorated coffin through the streets, and then leave it with the least possible covering in the tomb; and this permanent deep sentiment of life beyond the tomb, shows itself in numberless varied devices, such as the dove bearing the rose-bud to heaven, the worm breaking the chrysalis and soaring as a butterfly, that throng modern Christian burial places.

The consideration of funereal monuments under the Christian Revelation is a fitting close to this treatise on the Fine Arts and their criticism. Monuments to the dead demand from all the arts, Drawing, Sculpture, Architecture, Landscape Gardening and Decorative Art their highest efforts. It is the field for Decorative Art, last in order, speaking of man's final end; it is the most exalted, looking to his higher life; and it is exhaustless, drawing emblems from plants, animal and angelic beings, from the philosophy and poetry of all ages and nations. Above all it embodies the highest conceptions of the True, the Beautiful and the Good this side the grave; and drawing its life from inspired penmen, beginning with Job the patriarch, and ending with John, Christ's beloved apostle, it aspires to the perfect Right in the world beyond the tomb.

THE END.

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